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The Bulletin of the University of Minnesota

*The College of Science, Literature,
and the Arts*

1919-1920



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THE COLLEGE OF
SCIENCE, LITERATURE,
AND THE ARTS

ANNOUNCEMENT OF COURSES
FOR THE YEAR

1919-1920

1919							1920						
JULY							JANUARY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
..	..	1	2	3	4	5	..	..	..	..	1	2	3
6	7	8	9	10	11	12	4	5	6	7	8	9	10
13	14	15	16	17	18	19	11	12	13	14	15	16	17
20	21	22	23	24	25	26	18	19	20	21	22	23	24
27	28	29	30	31	..	..	25	26	27	28	29	30	31
..
AUGUST							FEBRUARY						
..	3	4	5	6	7	8	1	2	3	4	5	6	7
10	11	12	13	14	15	16	8	9	10	11	12	13	14
17	18	19	20	21	22	23	15	16	17	18	19	20	21
24	25	26	27	28	29	30	22	23	24	25	26	27	28
31	..	..	..	..	..	..	29	..	..	..	..	..	..
SEPTEMBER							MARCH						
..	1	2	3	4	5	6	..	1	2	3	4	5	6
7	8	9	10	11	12	13	7	8	9	10	11	12	13
14	15	16	17	18	19	20	14	15	16	17	18	19	20
21	22	23	24	25	26	27	21	22	23	24	25	26	27
28	29	30	..	..	..	..	28	29	30	31	..	..	..
OCTOBER							APRIL						
..	..	..	1	2	3	4	..	..	..	..	1	2	3
5	6	7	8	9	10	11	4	5	6	7	8	9	10
12	13	14	15	16	17	18	11	12	13	14	15	16	17
19	20	21	22	23	24	25	18	19	20	21	22	23	24
26	27	28	29	30	31	..	25	26	27	28	29	30	..
NOVEMBER							MAY						
..	2	3	4	5	6	7	..	2	3	4	5	6	7
9	10	11	12	13	14	15	9	10	11	12	13	14	15
16	17	18	19	20	21	22	16	17	18	19	20	21	22
23	24	25	26	27	28	29	23	24	25	26	27	28	29
30	..	..	..	..	..	..	30	31	..	..	..	..	..
DECEMBER							JUNE						
..	1	2	3	4	5	6	..	..	1	2	3	4	5
7	8	9	10	11	12	13	6	7	8	9	10	11	12
14	15	16	17	18	19	20	13	14	15	16	17	18	19
21	22	23	24	25	26	27	20	21	22	23	24	25	26
28	29	30	31	..	..	..	27	28	29	30	..	..	..

UNIVERSITY CALENDAR

1919-1920

1919

September	20	Saturday	Payment of fees closes, except for new students
September	24-30	Week	Examinations for removal of conditions, and entrance examinations
September	29	Monday	Registration period, Colleges of Science, Literature, and the Arts, and Agriculture, Forestry, and Home Economics
September	29-30		First semester evening extension classes begin
September	30	Tuesday	Registration days for all colleges not indicated above
October	1	Wednesday	Payment of fees for new students closes
October	16	Thursday	Fall quarter begins
November	27	Thursday	Senate meeting, 4:00 p.m..
December	18	Thursday	Thanksgiving Day; a holiday
December	23	Tuesday	Senate meeting, 4:00 p.m.
January	2	Friday	Christmas vacation begins 9:00 p.m.
January	2	Friday	Christmas vacation ends 8:30 a.m.
January	23	Friday	Winter quarter begins
February	2	Monday	First semester evening extension classes close
February	2-6	Week	Second semester evening extension classes begin
February	12	Thursday	Merchants' Short Course
February	19	Thursday	Lincoln's Birthday; a holiday
March	25	Thursday	Senate meeting, 4:00 p.m.
April	1	Thursday	Winter quarter ends
April	2	Friday	Spring quarter begins
May	20	Thursday	Good Friday; a holiday
May	21	Friday	Senate meeting, 4:00 p.m.
June	13	Sunday	Second semester evening extension classes close
June	16	Wednesday	Baccalaureate service
June	17	Thursday	Spring quarter closes
June	18-19		Forty-eighth Annual Commencement
June	21	Monday	Registration days for Summer quarter
September	3	Friday	Summer quarter begins
			Summer quarter closes

SCHEDULE OF EXAMINATIONS

Condition examinations in the Colleges of Science, Literature, and the Arts, Education, Engineering and Architecture, Mines, Chemistry, and Agriculture, Forestry, and Home Economics, for the removal of conditions of the winter and spring quarters will be given according to the following schedule:

Friday, Sept. 26	9 a.m.	Animal Biology, Botany, Physics, Agronomy and Farm Management, Animal Husbandry, Entomology and Economic Zoology
	2 p.m.	Astronomy, Chemistry, Agricultural Biochemistry, Bee Culture, Experimental Engineering
Saturday, Sept. 27	9 a.m.	Economics, Mathematics and Mechanics, History, Education, Agricultural Education, Dairy Husbandry, Farm Engineering, Drainage
	2 p.m.	French, Spanish, Italian, German, Greek, Latin, Scandinavian, Forestry, Home Economics, Drawing and Descriptive Geometry
Monday, Sept. 29	9 a.m.	Comparative Philology, Rhetoric, English, Horticulture, Plant Pathology, Poultry Husbandry, Rural and Agricultural Journalism, Metallurgical subjects
	2 p.m.	Political Science, Music, Philosophy, Psychology, Sociology and Anthropology, Social and Civic Work, Soils, Veterinary Medicine, Civil, Electrical, Mechanical Engineering and Architectural subjects
Tuesday, Sept. 30	9 a.m.	Geology and Mineralogy
	2 p.m.	Mining subjects

In case of conflict, special arrangements must be made with the instructor.

Schedules for the remaining schools and colleges will be announced in the fall, and may be secured at the offices of the respective deans.

THE COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS

FACULTY

MARION LeROY BURTON, Ph.D., D.D., LL.D., President
CYRUS NORTHROP LL.D., President Emeritus
JOHN B. JOHNSTON, Ph.D., Dean, Professor of Neurology
EDWARD E. NICHOLSON, M.A., Dean of Student Affairs, Assistant Professor
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ROYAL R. SHUMWAY, B.A., Assistant Dean, Associate Professor of Mathematics
CEPHAS D. ALLIN, LL.B., M.A., Professor of Political Science, Chairman
of the Department of Political Science
WILLIAM ANDERSON, Ph.D., Assistant Professor of Political Science
FRANCIS B. BARTON, Docteur de l'Université de Paris, Assistant Professor—
of Romance Languages
RALPH M. BARTON, B.A., Assistant Professor of Mathematics
²GEORGE N. BAUER, Ph.D., Professor of Mathematics
JERE BAXTER, Major, Assistant Professor of Military Science and Tactics
JOSEPH W. BEACH, Ph.D., Associate Professor of English
RICHARD O. BEARD, M.D., Associate Professor of Physiology
LUTHER L. BERNARD, Ph.D., Associate Professor of Sociology
HENRY C. BERTELSON, 1st Lieut., U. S. Army, Assistant Professor of Military
Science and Tactics
GUY R. BISBY, B.S., Assistant Professor of Plant Pathology and Botany
JOHN D. BLACK, Ph.D., Associate Professor of Economics
ROY G. BLAKELY, Ph.D., Professor of Economics
GISLE C. BOTHNE, M.A., Professor of Scandinavian Languages and Literatures,
and Head of the Department of Scandinavian Languages
¹RAYMOND W. BRINK, Ph.D., Assistant Professor of Mathematics
THOMAS M. BRODERICK, Ph.D., Assistant Professor of Geology
¹CARLETON BROWN, Ph.D., Professor of English
SOLON J. BUCK, Ph.D., Associate Professor of History
OSCAR C. BURKHARD, Ph.D., Assistant Professor of German
FRANK H. BURTON, Colonel, U.S.A., Professor of Military Science and
Tactics
RICHARD BURTON, Ph.D., Professor of English Literature
SAMUEL C. BURTON, M.A., Assistant Professor of Architecture
WILLIAM H. BUSSEY, Ph.D., Associate Professor of Mathematics, Chairman
of the Department of Mathematics
FREDERIC K. BUTTERS, Ph.D., Associate Professor of Botany

¹Absent on leave, 1919-20.

²Absent on leave till January 1.

Royal N. Chapman, Ph.D., Assistant Professor of Animal Biology
 Arthur E. Clark, Captain, U.S.A., Assistant Professor of Military Science and Tactics
 Lotus D. Coffman, Ph.D., Professor of Education, Head of the Department of Education
 Lillian Cohen, Ph.D., Assistant Professor of Chemistry
 Louis Joseph Cooke, M.D., Director of Physical Education for Men
 William S. Cooper, Ph.D., Assistant Professor of Botany
 William W. Cumberland, Ph.D., Associate Professor of Economics
 R. E. Cushman, Ph.D., Associate Professor of Political Science
 James Davies, Ph.D., Assistant Professor of German
 William Stearns Davis, Ph.D., Professor of Ancient History
 Hermione L. Dealey, Ph.D., Assistant Professor of Educational Psychology
 Z. Clark Dickinson, Ph.D., Assistant Professor of Economics
 Hal Downey, Ph.D., Professor of Animal Biology
 George W. Dowrie, Ph.D., Professor of Economics, Head of the Department of Economics
¹Edward Dana Durand, Ph.D., Professor of Economics
 Elias J. Durand, D.Sc., Professor of Botany
 Richard M. Elliott, Ph.D., Associate Professor of Psychology and Chairman of the Department of Psychology
 Manuel C. Elmer, Ph.D., Associate Professor of Sociology
 William H. Emmons, Ph.D., Professor of Geology, Head of the Department of Geology and Mineralogy
 Charles A. Erdmann, M.D., Associate Professor of Applied Anatomy
 Henry Anton Erikson, Ph.D., Professor of Physics, Chairman of the Department of Physics
 Donald N. Ferguson, B.A., Assistant Professor of Pianoforte
 Mabel R. Fernald, Ph.D., Assistant Professor of Psychology
 Ross L. Finney, Ph.D., Assistant Professor of Educational Sociology
¹Oscar W. Firkins, M.A., Professor of English
 Daniel Ford, M.A., Assistant Professor of Rhetoric
 Guy Stanton Ford, Ph.D., Professor of History, Chairman of the Department of History
 James H. Forsythe, M.A. in Architecture, Assistant Professor of Architecture
 William K. Foster, LL.M., Assistant Professor of Physical Education for Men
 William S. Foster, Ph.D., Associate Professor of Psychology
 George Bell Frankforter, Ph.D., Professor of Chemistry
 Edward M. Freeman, Ph.D., Professor of Plant Pathology and Botany
 Jules T. Frelin, B.A., Assistant Professor of Romance Languages
 Robert W. French, B.S. in C.E., Assistant Professor of Drawing and Descriptive Geometry

¹Absent on leave, 1919-20.

FREDERICK B. GARVER, Ph.D., Associate Professor of Economics
 ISAAC W. GEIGER, Ph.D., Assistant Professor of Chemistry
 HARRIET I. GOLDSTEIN, Associate Professor of Drawing and Design
 JOHN EVERSON GRANRUD, Ph.D., Professor of Latin
 NORMAN SCOTT BRIEN GRAS, Ph.D., Professor of Economic History
 JOHN HENRY GRAY, Ph.D., Professor of Economics
 FRANK F. GROUT, Ph.D., Professor of Geology and Mineralogy
 MELVIN E. HAGGERTY, Ph.D., Professor of Educational Psychology
 ALVIN HARVEY HANSEN, Ph.D., Associate Professor of Economics
 WILLIAM L. HART, Ph.D., Assistant Professor of Mathematics
 ARTHUR T. HENRICI, M.D., Assistant Professor of Bacteriology and Immunology
² CYRIL A. HERRICK, B.A., Assistant Professor of Rhetoric
 JAMES T. HILLHOUSE, Ph.D., Assistant Professor of Rhetoric
 CLARENCE L. HOLMES, M.A., Assistant Professor of Economics
 RALPH E. HOUSE, Ph.D., Associate Professor of Romance Languages
 CHARLES W. HOWARD, B.A., M.S., Assistant Professor of Entomology
 NED L. HUFF, M.A., Assistant Professor of Botany
 WILLIAM H. HUNTER, Ph.D., Associate Professor of Chemistry
 CLARENCE MARTIN JACKSON, M.S., M.D., Professor of Anatomy and Director of the Department
 DUNHAM JACKSON, Ph.D., Professor of Mathematics
 WEST C. JACOBS, Lt. Colonel, U.S.A., Assistant Professor of Military Science and Tactics
 ALBERT C. JAMES, M.B.A., Assistant Professor of Economics
 ALBERT ERNEST JENKS, Ph.D., Professor of Anthropology, Chairman of the Department of Anthropology and Director of the Americanization Training Course
¹ A. WALFRED JOHNSTON, M.A., Assistant Professor of Geology and Mineralogy
 LAUDER W. JONES, Ph.D., Professor of Chemistry, Head of the Department of Chemistry
 ROY C. JONES, M.S. in Architecture, Assistant Professor of Architecture
 OSCAR W. JUNEK, Ph.D., Assistant Professor of Americanization
 FRANCIS B. KINGSBURY, Ph.D., Assistant Professor of Physiology
 WILLIAM H. KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry and Head of the Department of Drawing and Descriptive Geometry
 MAY S. KISOCK, B.A., Assistant Professor of Physical Education for Women
 FREDERICK KLAEBER, Ph.D., Professor of Comparative and English Philology, Head of the Department of Comparative Philology
 LEE I. KNIGHT, Ph.D., Professor of Botany
 ALFRED E. KOENIG, M.A., Dr. Theol., Assistant Professor of German

¹Absent on leave, 1919-20.

²Absent on leave, fall quarter 1919.

AUGUST CHARLES KREY, Ph.D., Associate Professor of History
 SAMUEL KROESCH, Ph.D., Assistant Professor of German
 WINFORD P. LARSON, M.D., Professor of Bacteriology and Immunology
² KARL S. LASHLEY, Ph.D., Assistant Professor of Psychology
 FRANCIS P. LEAVENWORTH, M.A., Professor of Astronomy, Head of the Department of Astronomy
 IRVILLE C. LECOMPTE, Ph.D., Professor of Romance Languages
 THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy
 RUPERT C. LODGE, M.A., Assistant Professor of Philosophy
 ELMER J. LUND, Ph.D., Associate Professor of Zoology
 GUSTAV A. LUNDQUIST, M.A., Assistant Professor of Rural Sociology
 ELIAS P. LYON, Ph.D., Professor of Physiology and Director of the Department of Physiology
 JESSE F. McCLENDON, Ph.D., Associate Professor of Physiology
 FRANK H. MACDOUGALL, Ph.D., Associate Professor of Chemistry
 FREDERICK M. MANN, M.S. in Arch., Professor of Architecture
 WILFORD S. MILLER, Ph.D., Associate Professor of Education
¹ RAYMOND MOLEY, Ph.D., Associate Professor of Political Science
 CECIL A. MOORE, Ph.D., Associate Professor of English
 WILLIAM MOORE, B.A., Associate Professor of Entomology
 JOHN B. MORGAN, Ph.D., Assistant Professor of Psychology
 BRUCE D. MUDGETT, Ph.D., Associate Professor of Economics
 WALTER R. MYERS, Ph.D., Assistant Professor of German
 HENRY F. NACHTRIEB, B.S., Professor of Animal Biology, Head of the Department of Animal Biology and Director of the Zoological Museum
 ALLEN T. NEWMAN, M.A., Captain, U.S.A., Assistant Professor of Military Science and Tactics
 CHARLES W. NICHOLS, Ph.D., Assistant Professor of Rhetoric
 HOWARD S. NOBLE, M.B.A., Assistant Professor of Economics
 J. ANNA NORRIS, M.D., Director of Health and Physical Education for Women
 GEORGE NORTON NORTHROP, M.A., Assistant Professor of English
 WALLACE NOTESTEIN, Ph.D., Professor of History
 ERNEST A. NUOFFER, 2nd Lieutenant, U.S.A., Assistant Professor of Military Science and Tactics
 OSCAR W. OESTLUND, Ph.D., Assistant Professor of Animal Biology
 EVERETT WARD OLNSTED, Ph.D., Professor of Romance Languages, Head of the Department of Romance Languages
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 CHAUNCEY J. V. PETTIBONE, Ph.D., Assistant Professor of Physiological Chemistry
 ANNA A. H. PHELAN, Ph.D., Assistant Professor of Rhetoric
 RUTH SHEPARD PHELPS, M.A., Associate Professor of Italian

¹Absent on leave, 1919-20.

²Absent on leave, fall quarter 1919.

JOSEPH BROWN PIKE, Ph.D., Professor of Latin, Head of the Department of Latin

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NORMAN J. RADDER, B.A., Assistant Professor of Journalism

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JOHN H. SHERMAN, B.A., Professorial Lecturer in Economics
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CAROLINE BEDFORD, B.A., Supervisor of Practice Field Work in Social and Civic Work
ANNE BENTON, M.A., Instructor in Bacteriology
JOHN J. BOWENS, Sergeant, U.S.A., Instructor in Military Science and Tactics
E. S. BROWN, M.D., Instructor in Physical Education for Men
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THOMAS S. BUSSOM, B.A., Instructor in Romance Languages
BERTHA W. CLARK, M.A., Instructor in Americanization
HERIBERT E. CLEFTON, M.A., Instructor in Romance Languages

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ELDEN R. FOSSEY, Sergeant, U.S.A., Instructor in Military Science and
Tactics
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PERCY C. GLIDDEN, Instructor in Physical Education for Men
VETTA GOLDSTEIN, Instructor in Drawing and Design
ESTHER M. GREISHEIMER, B.S. in E., Instructor in Physiology
MARGUERITE GUINOTTE, Brevet Supérieur, Certificat d'Aptitude Pédagogique, Instructor in Romance Languages
JEFFERSON M. HAMILTON, Instructor in Architecture
JOSEPH HAVLICEK, Sergeant, U.S.A., Instructor in Military Science and
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GERTRUDE R. HULL, Instructor in Voice
SIGURD B. HUSTVEDT, Ph.D., Instructor in Rhetoric
ELIZABETH JACKSON, Ph.D., Instructor in Rhetoric
ARTHUR M. JOHNSON, Ph.D., Instructor in Botany
HARRISON WALL JOHNSON, Instructor in Music
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ALVIN H. LARSON, B.S. in Agr., Instructor in Plant Pathology and Botany
CHARLES F. LINDSLEY, M.A., Instructor in Rhetoric
ALBERT J. LOBB, Ph.B., LL.B., Instructor in Political Science
WINSLOW H. LOVELAND, M.A., Instructor in Rhetoric
FRANCES E. LOWELL, Ph.D., Instructor in Psychology
MABEL C. McDOWELL, Instructor in Home Economics
ARIEL MACNAUGHTON, M.A., Instructor in Rhetoric
THOMAS R. MATHER, M.A., Instructor in Rhetoric
ALLEN G. NEWHALL, B.S., Instructor in Botany and Plant Pathology
WILLIAM G. PALMS, Sergeant, U.S.A., Instructor in Military Science and
Tactics
VICTOR H. PELZ, M.S., Instructor in Economics
ABE PEPINSKY, Instructor in Violin
JAMES T. PETERKIN, B.S., Instructor in Architecture
ETHEL L. PHELPS, B.S., Instructor in Textiles and Clothing
WILLIAM D. REEVE, B.S., Instructor in Mathematics and Education

GERTRUDE REEVES, Instructor in Pianoforte
 ADOLPH RINGOEN, Ph.D., Instructor in Animal Biology
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 STANLEY I. RYPINS, Ph.D., Instructor in Rhetoric
 KARL SCHEURER, Instructor in Music
 MINNA J. SCHICK, M.A., Instructor in Mathematics
 GERTRUDE B. SCHILL, B.A., Instructor in Physical Education for Women
 GEORGE MALCOLM STEPHENSON, Ph.D., Instructor in History
 LAVINIA STINSON, B.A., Instructor in Home Economics
 EMERSON G. SUTCLIFFE, Ph.D., Instructor in Rhetoric
 MARION TEBBETTS, B.A., Supervisor of Practice Field Work in Social and
 Civic Work, Director of Hospital Social Service Department
 ELLA A. M. THORE, B.A., Instructor in Mathematics
 ARTHUR J. TIEJE, Ph.D., Instructor in Geology
 ALICE J. HOPKINS TOLG, M.D., Instructor in Physical Education for
 Women
 GUSTAVE VAN ROOSBROECK, M.A., Instructor in Romance Languages
 SAMUEL VASCONCELOS, LL.B., Abogado, Instructor in Romance Languages
 HOWARD T. VIETS, M.A., Instructor in Rhetoric
 GUY H. WOOLLETT, Ph.D., Instructor in Chemistry
 CHESTER H. YEATON, Ph.D., Instructor in Mathematics

ASSISTANTS AND SCHOLARS

1919-1920

ANIMAL BIOLOGY

JOHN A. CEDERSTROM, Ph.B., Assistant
 EMILY H. PAYNE, M.A., Assistant
 CAROL YOUNG, Assistant
 ROLAND F. HUSSEY, B.A., Teaching Fellow
 ETHEL SLIDER, B.A., Technician

ANTHROPOLOGY

ALONZO GRACE, B.A., Scholar

BOTANY

ANNA P. FESSENDEN, Teaching Fellow
 EDNA SONTAG, B.A., Teaching Fellow
 EABEL B. WORKING, Teaching Fellow

ENGLISH

DOROTHY HUDSON, Assistant
 ALEXANDER R. COWNE, B.A., Scholar
 MARGARET E. FOQUE, Scholar

GEOLOGY

M. J. VAN DER LINDEN, Scholar

GERMAN

ESTHER HENDRICKSON, B.A., Scholar

ESTHER STRAND, B.A., Scholar

HISTORY

MILDRED HARTSOUGH, B.A., Assistant

BERTHA HINSHAW, Assistant

CHARLOTTE R. FARRINGTON, Teaching Fellow

GERTRUDE A. JACOBSEN, M.A., Teaching Fellow

LOUISE M. LEONARD, B.A., Teaching Fellow

GEORGINA TALBOT, Teaching Fellow

FAITH THOMPSON, M.A., Teaching Fellow

PAUL ABRAHAMSON, Scholar

ARTHUR J. NELSON, Scholar

MATHEMATICS

CAREY M. JENSEN, M.A., Scholar

MUSIC

HELEN SCHMIDT, B.A., Assistant

PHYSICS

FRANCES JOHNSON, M.A., Teaching Fellow

ARCHIE DAYTON POWERS, M.A., Teaching Fellow

JAMES W. BROXON, B.A., Teaching Assistant

KATHERINE VINA DOWNEY, M.A., Teaching Assistant

GERHARD ELLESTAD, B.A., Teaching Assistant

JOSEPH VALASEK, B.A., Teaching Assistant

CHRISTINA JOY HAMRIN, B.A., Teaching Assistant

JOHN OSCAR JOHNSON, B.A., Teaching Assistant

POLITICAL SCIENCE

C. W. GREENWALDT, Scholar

J. A. STRUETT, Scholar

PSYCHOLOGY

MARGARET KINCAID, Teaching Fellow

H. R. MAYBERRY, Teaching Fellow

OSCAR P. PEARSON, Teaching Fellow

CALVIN P. STONE, Teaching Fellow

PAUL T. YOUNG, Teaching Fellow

RHETORIC

MARY ELLEN CHASE, M.A., Assistant

GUY L. DIFFENBAUGH, M.A., Assistant

FRANCES ELIZABETH KELLEY, M.A., Assistant

ROMANCE LANGUAGES

THEL M. ELLIOTT, B.A., Teaching Fellow

PAUL KRAMER, B.A., Teaching Fellow

OLIVE NOTT, B.A., Teaching Fellow

CAMILA HENRIQUEZ URENA, M.A., Teaching Fellow

SOCIOLOGY

ALMENA DAWLEY, M.A., Teaching Fellow

ANNE VAN DER HAGEN, B.A., Scholar

GENERAL INFORMATION

ADMISSION

Admission is either by certificate or by examination. Candidates must have completed the equivalent of a four-year high-school course and must present:

1. Four units of English; or three units of English and four units of a foreign language; or three units of English and two units in each of two foreign languages.
2. One unit of algebra and one unit of plane geometry.
3. Enough additional work to make in all fifteen units, of which not more than four may be in Group F.

A detailed statement of admission requirements may be found in the Bulletin of General Information.

Attention is called to the following rules governing students entering with advanced standing:

Credits of advanced standing are to be provisional and finally adjusted upon the following basis: Any student who, after one year's residence, has failures in at least nine credits shall lose all advanced credit except in those courses which have been continued in this College with a grade of at least C. Credits forfeited in this way can be secured only by special examination.

Students entering with advanced standing must earn an average of one honor point per credit for all work taken in this College which is to be counted toward a degree.

A student entering the Senior College, who at the end of the first quarter, does not meet the requirement of one honor point per credit carried, will be enrolled in the Junior College.

For admission to Senior College courses, such students must have had a standing in their previous work equivalent to that required of students who take the freshman and sophomore work in this College.

CLASS ROUTINE AND SCHOLASTIC REQUIREMENTS

Classes are held every week-day except Saturday afternoon. Recitation periods are fifty minutes long and begin at eight-thirty, nine-thirty, ten-thirty, one-thirty, two-thirty, three-thirty, and four-thirty. A general assembly of Faculty and students is held at eleven-thirty on certain Thursdays.

In the Junior College, courses of instruction are normally five credit courses. In the Senior College one, two and three credit courses are also given.

Examinations are held at the close of each quarter. A student's grade is based upon his class work and examinations. Four grades, A, B, C, and D, are given for work done satisfactorily. Work not done satisfactorily is marked E (condition), or F (failure). Work of a satisfactory character, but not completed is marked I (incomplete). An "incom-

plete" must be removed within one month after the opening of the following quarter; otherwise it becomes a "condition." A "condition," if not removed before the opening of the corresponding quarter of the following year becomes a "failure." A "failure" in a subject required of a student must be removed by pursuing the work again in class the next time the course is offered.

Requirements for graduation are expressed in credits, indicating amount of work; and in honor points, indicating grade of work. Each credit demands on the average three hours a week of the student's time; that is, one recitation with two hours of preparation, or three hours of laboratory work. Honor points are computed as follows; each credit with the grade of A carries three honor points; each credit with the grade of B, two honor points; each credit with the grade of C, one honor point.

Continued residence in the College is conditioned on reasonable advance toward graduation. The Administrative Board may at any time drop from the rolls of the College any student who does not make such reasonable advance. A student so dropped will not be allowed to reenter the University until a full quarter has elapsed.

No student will be considered to have a wholly satisfactory standing who fails to secure, in the course of any year, the normal advance of one honor point for each credit for which he is registered. Students who fall below this normal standard will be subject to special consideration as individual cases by the Administrative Board.

Any student who, either in speaking or in writing, habitually uses bad English will be reported by his instructor to the Dean with all available evidence. If this evidence seems to the Dean sufficient he will require the student to take without credit such further work in Rhetoric as the head of the Rhetoric Department may designate.

THE JUNIOR AND SENIOR COLLEGES

1. The College distinguishes between the Junior College, consisting of the first two years, and the Senior College, consisting of the third and fourth years.

2. All courses which are open to freshmen or sophomores are designated Junior College courses. All courses which are open primarily to juniors, seniors, or graduates are designated Senior College courses.

Senior College courses are open to sophomores who have an average of one honor point per credit hour in all their work and in the prerequisite courses, upon the approval of the department concerned and the Administrative Board.

3. Senior College courses shall have as prerequisites courses amounting to six credits when the department is not open to freshmen, or to nine credits when the department itself, or the department which offers the prerequisite courses, is open to freshmen. Certain Senior College courses are designated by the departments concerned as starred courses.

4. Students registered in combined courses shall secure forty-five credits and forty-five honor points per year (three quarters) of work required in this College before being recommended for entrance to the

work of the professional school. In order that such students may receive the bachelor's degree after completion of the required professional work the Faculty of the professional school shall certify that they have maintained an equivalent standing in the work of the professional school which is counted toward the degree given by this College.

5. Any student who fails to complete the Junior or Senior College requirements within the normal period will, in order to complete the work, be required to continue in that college for one or more University sessions. During this period, such students will be required to secure an average of one honor point for every credit of work for which he is registered.

FACULTY ADVISERS FOR STUDENTS

Every freshman student is assigned to an Adviser whose duty is to give information and help in all matters pertaining to the College work. The work of sophomore, junior, and senior students is also under the direction of the committee of advisers until their choice of a major interest brings them under the direction and control of a department in which that special work is done.

The Adviser discusses with the student the selection of studies and approves his program and registration; gives information or sends the student to the best source of information about the choice of a vocation and the preparation for it; helps the student to understand the proper sequence of studies and the relationship of various fields of study to the main purpose toward which the student is aiming. Living conditions, methods of study, and the other activities of the student strongly influence college work and are subjects for consideration by the Advisers.

The general purpose of the Advisers is to help the student to get the best out of his college course, to develop his responsibility for planning his work, and to encourage him to make the most of his own powers.

The special efforts made to aid and advise the student call for prompt response on his part. Every student is required to attend conferences when notified and to follow the instructions of his Adviser.

COURSES OF STUDY

A student may, while registered in the College of Science, Literature, and the Arts, pursue one of the following courses:

Courses given within this College:

1. A general course leading to the degree of Bachelor of Arts.
2. An intensive course leading to the degree of Bachelor of Arts with Honors.
3. A four-year course leading to the degree of Bachelor of Music.
4. A four-year course in Architecture and Decoration leading to the degree of Bachelor of Science.
5. A four-year course in Americanization Training Work leading to the degree of Bachelor of Science.
6. A five-year course in Training for Social and Civic Work leading to the degree of Bachelor of Science.
7. A five-year course in Training for Diplomatic and Consular Service leading to the degree of Bachelor of Science.
8. A five-year course in Training for State and Federal Administration leading to the degree of Bachelor of Arts.
9. A five-year course in Training for Municipal Administration and Engineering leading to the degree of Bachelor of Science.
10. A two-year Business Course for admission to the School of Business.

In each of the five-year courses the student may become a candidate for the Master's degree under the regulations of the Graduate School.

Combined arts and professional courses:

A six-year course leading to the degrees of Bachelor of Arts and Bachelor of Laws.

A five-year course leading to the degrees of Bachelor of Arts and Bachelor of Science in Chemistry.

An eight-year course leading to the degrees of Bachelor of Arts and Doctor of Medicine.

A seven-year course leading to the degrees of Bachelor of Science and Doctor of Medicine.

A six-year course leading to the degrees of Bachelor of Arts and Doctor of Dental Surgery.

A five-year course leading to the degree of Bachelor of Science and Certificate in Nursing.

A four-year course leading to the degree of Bachelor of Arts with special training in Military Science and Tactics

A six-year course leading to the degree of Bachelor of Science and the appropriate degree in Architecture.

REGULATIONS APPLYING TO ALL COURSES

Military Drill is required of all freshman and sophomore men and Physical Education of all freshman men and all freshman and sophomore women.

Rhetoric-English A-B-C is required of all freshmen and sophomores.

No student may elect work in any quarter in more than five departments.

Students, except those in the third and fourth years of the Honors Course, must elect at least thirteen credits a week. Permission to take less than that number must be secured from the Administrative Board.

Students may ordinarily elect not more than seventeen credits. After the freshman year a student who has an average of one and one-half honor points per credit for the previous quarter, or the previous two quarters, and who has no condition or failure the previous quarter, may elect eighteen credits.

I. GENERAL COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS

The degree of Bachelor of Arts will be conferred by the College of Science, Literature, and the Arts, upon any student who fulfills all the requirements stated below.

AMOUNT AND GRADE OF WORK

1. During his entire course the student must earn one hundred and eighty credits and one hundred and eighty honor points.

2. No student may receive credit for more than two beginning modern language courses except upon the recommendation of a department in which the student requires such additional languages for his advanced work.

3. At least forty-five credits must be earned in residence at this College. If the term of residence is only one year, that year must be the senior year; and, in any case, at least half of the work of the senior year must be done in residence.

GROUP REQUIREMENTS

At least twenty credits in each of the following groups of subjects are required for graduation. Students are strongly advised to meet these requirements as early in their course as possible.

GROUP A	GROUP B	GROUP C
Ancient and modern languages	History	Mathematics
English	Anthropology	Animal Biology
Rhetoric	Economics	Botany
Public Speaking	Philosophy	Chemistry
	Political Science	Physics
	Sociology	Astronomy
		Geology and Mineralogy
		Psychology

DISTRIBUTION OF WORK

Junior College

During the first two years the student must complete the following required subjects:

- a. Rhetoric-English, fifteen credits.
- b. History, ten credits.
- c. Laboratory science (Chemistry, Physics, Botany, Animal Biology), ten credits.
- d. A foreign language, ten to fifteen credits according to the amount of high-school preparation as follows:

High-school work less than two units of one foreign language; College requirements fifteen credits. High-school work two or more units of one foreign language: College requirements ten credits if the same language is pursued in College, otherwise, fifteen credits.

Two of these required subjects must be begun the first quarter and the other two not later than the fourth quarter of a student's course.

When a required subject is begun, it must be continued for at least two quarters.

Senior College

For admission to the Senior College (junior and senior years), eighty-four credits and eighty-four honor points are required. Beginning with the class which enters the Junior College in the fall of 1919, ninety credits and ninety honor points will be required.

The work in the Senior College must include at least forty-five credits in starred courses at least eighteen of which must be in one department.

ELECTION OF SUBJECTS IN OTHER COLLEGES OR SCHOOLS

Certain courses given in other colleges or schools of this University are open to junior and senior students of this College who have the specified prerequisites. Provided no duplication of subjects occurs, these courses may be taken on the same terms as courses given in this College and will count toward the B.A. degree. Such courses are listed in the program.

EXTENSION COURSES

Credits received in University Extension courses are counted as credits in this College only after the student has completed one year of work in the College and has met the requirements of the department concerned.

CORRESPONDENCE COURSES

The equivalent of some of the introductory courses in various departments is offered by correspondence under the auspices of the Extension Division. Those desiring information regarding such courses should consult the Extension Division.

THE UNIVERSITY STATE TEACHERS' CERTIFICATE

Beginning with the year 1919-20, students entering the junior class who expect to receive the teacher's certificate from the University of Minnesota at the end of a four-year college course must register in the College of Education. Students registered in this College who expect to graduate in 1919-20 may secure the teacher's certificate at the time of graduation from the College of Science, Literature, and the Arts.

For information regarding the requirements for the certificate, they should consult the Bulletin of the College of Education.

SCHOOL OF BUSINESS

In place of the course in Business Education, there has been organized a School of Business which will offer a three years' course. Two years of work in the College of Science, Literature, and the Arts is required for admission to the School.

II. COURSE LEADING TO THE DEGREE OF BACHELOR OF ARTS WITH HONORS

The degree of Bachelor of Arts with Honors is given upon the completion of a specialized and intensive course of study.

Students who desire this degree are strongly advised to register for it and seek the advice of the major department as early in their course as possible. The election of the honors course must be made and the major subject chosen before the end of the sophomore year.

Students electing the honors course must present at the end of the sophomore year ninety credits and one hundred and thirty-five honor points and must demonstrate to the major department their ability to use one or more foreign languages specified by the department.

The honors course requires one hundred and fifty-eight credits in class work and a satisfactory thesis in the major subject. The student must maintain an average standing of B in the major subject and also in the work of the junior and senior years, and must be recommended for graduation by the staff of the major department.

A student in good standing in the honors course may transfer to the general course, and a student who at any time falls below the standing required in the honors course will be transferred to the general course by the Administrative Board. The conditions of the transfer in all cases are to be determined by the Board.

OUTLINE OF COURSE

The requirements in the freshman and sophomore years are the same as for students in the general course.

The requirements for the junior and senior years are as follows:

1. Major Subject

The student shall devote half his time during these two years to work defined by the major department and approved by the Advisory Committee. All such courses must rest on sophomore work as prerequisites. The departments shall provide for an advancing sequence in the student's work during the junior and senior years. At least one year (nine credits) must consist of individual work in advanced courses whose object is to prepare the student for independent investigation. The thesis shall be prepared in connection with this work and under the direction of the instructor.

The thesis shall give evidence of ability to use successfully the laboratory and library materials and methods required in the subject and a thoro command of present knowledge on the topic selected.

2. Electives

In addition to the major, the student shall complete enough elective courses to make a total of one hundred and fifty-eight credits. The student is advised to take from twenty-four to thirty credits in his junior year.

III. FOUR-YEAR COURSE IN ARTS AND MUSIC LEADING TO THE DEGREE OF BACHELOR OF MUSIC

The University of Minnesota offers a four years' course leading to the degree of Bachelor of Music.* The aim of this course is two-fold: to provide the best available training in practical music, and to lay the foundation for a true understanding of music as literature—that is, as a vital element in modern culture. For the attainment of the first end, thoro courses in the theory, history, and the appreciation of music are required; to achieve the second, the student is given a background of history, literature, and science, these courses being in many cases especially arranged by the faculties of the various departments to parallel and supplement the work given by the Department of Music. The course is designed to meet the requirements of students who wish the cultural benefits of a college education, but whose aptitude in music would lead them to forego these benefits if music were not made a primary interest in their work.

In the field of practical music the greatest pains are expended in developing the individual student's talent. But the University recognizes the fact that many students who have neither the desire nor the capacity for the arduous career of concert performers are much better fitted than the average practical musician for the work of teaching. For such students unique opportunities for study in the special fields of public school music are provided together with practical instruction in instrumental teaching. The University thus, at a charge considerably smaller than is asked by private instructors of the first rank or in conservatories of music, not only offers every facility for practical music study, but prepares its students to occupy the position of broadly educated and influential members of the musical community in which they shall find themselves after graduation.

The requirements for admission are the same as for admission to the freshman class in the General Course together with one of the following requirements in Music, according to the instrument selected:

Pianoforte: Candidate must be able to play Czerny's *School of Velocity*, and the easier Haydn and Mozart sonatas.

* The degree of Bachelor of Music will not be given until 1921. Until then students in Music will earn the degree of Bachelor of Arts in Music.

Violin: Candidate must be able to play the first ten studies of the Kayser *Etudes*.

Voice: Candidate must possess good natural equipment, and have some previous musical training.

Orchestral Instruments: Candidate must pass entrance examinations equal to the grade required of candidates who wish to select violin. Students from high schools granting credit in music toward graduation may present four units in music for entrance.

The number of credits required for the degree in Music is one hundred and eighty, not counting Military Drill or Physical Education, which are required the same as for the B.A. degree. During the four years the student must earn one hundred and eighty honor points, including forty-eight honor points in applied music.

The one-half hour lessons, plus twelve to fifteen hours' practice a week for one quarter are required in order to gain four credits in applied music.

Students who elect voice as their major study must earn thirty credits and, by special permission of the Faculty of the Department, may be allowed to earn thirty-six credits in voice during the four years. During each of the first two years six credits must be earned in voice and six in piano. In the junior year the student may be permitted, and in the senior year will be expected, to take additional work in voice in place of the instrumental work.

Students who elect other subjects than voice as their major must earn thirty-six credits in the chosen subjects, specializing in the junior and senior years.

OUTLINE OF COURSE

Freshman Year

(Not less than fifteen credits each quarter)

1. Elect four credits from A, or four from B, including Voice

A

Piano (4)
Violin (4)
Cello (4)
Organ (4)

B

Piano (2)
Violin (2)
Voice (2)
Cello (2)
Organ (2)

2. Harmony (3)

3. Rhetoric (3)

4. History (3)

5. Physical Education (no credit)

Elective, Orchestra (1), Choir (1)

Sophomore Year

(Not less than fifteen credits each quarter)

1. Elect four credits from A, or four credits from B, including Voice

A	B
Piano (4)	Piano (2)
Violin (4)	Violin (2)
Cello (4)	Voice (2)
Organ (4)	Cello (2)
	Organ (2)
2. Counterpoint (2)	
3. Psychology (3) first and second quarters; Acoustics (3) third quarter	
4. Modern language (5)	
5. Appreciation of Music (1)	
6. Ear Training (no credit)	
Elective, Orchestra (1), Choir (1)	

Junior Year

(Not less than sixteen credits each quarter)

1. Elect four credits from A, or four from B, including Voice

A	B
Piano (4)	Piano (2)
Violin (4)	Violin (2)
Voice (4)	Voice (2)
Cello (4)	Cello (2)
Organ (4)	Organ (2)
2. History of Music (3)	
3. Normal Piano (3), or Public School Music (3)	
4. Ear Training (no credit)	
5. History of Education (3) first quarter	
Educational Psychology (3) second quarter	
Technique of Teaching (3), or Social Aspects (3) third quarter	
6. Elective (3)	
Elective Orchestra (1), or Choir (1), Composition (1)	

Senior Year

(Not less than fourteen credits each quarter)

1. Elect four credits from A, or four credits from B, including Voice.

A	B
Piano (4)	Piano (2)
Violin (4)	Violin (2)
Voice (4)	
Cello (4)	
Organ (4)	
2. Bach and Beethoven, first and second quarters; Wagner and Brahms, third quarter (2)	
3. Normal Piano (3) or Public School Music (3)	
4. Ensemble (1)	
5. Analysis (1)	
6. Elective (3)	
Elective, Orchestra (1), Choir (1)	

IV. FIVE-YEAR COURSE IN SOCIAL AND CIVIC WORK, LEADING TO THE DEGREE OF BACHELOR OF SCIENCE AND MASTER OF ARTS

This course is organized in response to a demand for distinctive technical training for professional social service. It covers both undergraduate and graduate work. Satisfactory completion of the four-year course leads to the B.S. degree. A fifth year's work is designed leading primarily to a special certificate of proficiency; but students whose programs satisfy the requirements of both the training course and the Graduate School may receive the M.A. degree in addition to the special certificate.

The organization of the course of study aims to give the undergraduate the fundamentals of a broad modern education with considerable emphasis upon history, economics, political science, psychology, and language. To this end all intensive specialization is reserved for the fourth and later years of study.

The fourth year includes comparatively few required courses, but a long list of advised electives, for which other electives may be substituted according to the individual student's needs. While the four-year course as arranged should confer upon the student a certain degree of familiarity with the problems of social and civic work, really adequate professional preparation demands at least one year of graduate study. With this professional instruction in view, during the fifth and later years of study only an irreducible minimum of specified courses is required; the emphasis is laid upon providing individual programs to meet the student's special inclination, aptitudes, or need.

REQUIRED

Rhetoric, modern language, science, and History to meet requirements of the Arts College.

Attendance (without credit) at a series of lectures on graphic methods.

ELECTIVE

Courses open to freshmen in languages, History, science, or Mathematics.

SECOND-YEAR STUDIES

REQUIRED

Modern language or English, and science to meet requirements of the Arts College.

Sociology and Anthropology

Introduction to Sociology and Anthropology

Psychology

General Psychology

Economics

General Economics

Political Science

American Government

ELECTIVE

Sociology and Anthropology

Cultural Anthropology

Modern Social Reform Movements

Philosophy

Logic or Ethics

Courses in History of Philosophy

THIRD-YEAR STUDIES

REQUIRED

Sociology and Anthropology
 Treatment of Defectives and Dependents
 Treatment of Delinquents
 Child Welfare
 Housing
Economics
 Labor Problems
Political Science
 American Municipal Administration
 (European Municipal Administration should be elected if possible)

ELECTIVE

Courses in English, modern language, or History
Education
 Social Aspects of Education
 History of Education
Sociology and Anthropology
 Rural Sociology
 Social Psychology
 State Care of Dependents, Defectives, and Delinquents
 Physical Anthropology
 The Negro
Economics
 Socialism
 Wages
 Trade Unions
Political Science
 State and Local Government
 Business Law
Bacteriology
 General Bacteriology
 Courses on Public Health

FOURTH-YEAR AND GRADUATE STUDIES

REQUIRED

Sociology and Anthropology
 Social Psychology (if not already elected)
 Social and Industrial Legislation
 Social Statistics and Social Surveys
 The Family
 Social Progress
 Methods of Community Organization and Social Work in Small Towns and Country

ELECTIVE

Sociology and Anthropology
 The American People
 Field Work in Hospital Social Service
 Charitable Administration, Finance, and Publicity
 Technique of Family Treatment
 Juvenile Courts and Probation
 Settlement and Social Center Work
 The Immigrant
 Seminars in Sociology and Anthropology
 Courses on Recreation and Playground Work
 Courses on Public Health

(SPECIAL NOTE)

For a fifth year's work consisting of 9 hours' class work and 12 hours of supervised field work per week for three quarters the student will receive a special certificate. He will be eligible for the Master's degree if his program is approved by the Graduate School and if he prepares a satisfactory thesis in addition to the work required for the special certificate.

Economics
 Public Finance
 Principles of Accounting
Political Science
 Constitutional Law
 Legislative Power and Methods
 Police Power
Animal Biology
 Eugenics
Psychology
 Abnormal Psychology
 Mental Retardation
 Child Development
 Courses in Education if not already elected
Physical Education
Hygiene of the Family
 Courses in Home Economics (especially Dietetics and Household Administration)
Sanitary Engineering

V. FOUR YEARS' COURSE IN AMERICANIZATION TRAINING
 WORK LEADING TO THE DEGREE OF
 BACHELOR OF SCIENCE

FRESHMAN YEAR

REQUIRED	CREDITS
Rhetoric	15
Modern European History (1-2)...	10
American History	5
General Zoology	10
Introduction to Anthropology.....	5

SOPHOMORE YEAR

REQUIRED	CREDITS	ELECTIVES
Modern language	9 or 15	English Survey
American History (continued). .	5	Public Speaking
American Government	5	Modern language
General Anthropology.....	3	Geography
General Immigration.....	3	Modern Social Reform Movements
General Psychology	9	Cultural Anthropology
Electives	9 to 18	Elements of Educational Psychology
		Food Preparation
		Elementary Dietetics

JUNIOR YEAR

In the Senior College (junior and senior years) the electives of individual students will vary much, depending on the phases of work and the groups of peoples in which the student is specializing. All electives must be approved by the Director.

REQUIRED	CREDITS	ELECTIVES
American People	9	Supervised Americanization Work
Methods and Organization of Americanization Work ¹	9	Municipal Government
General Economics	10	State and Local Government
Electives	18 to 23	Immigrant Woman
Aliens' Viewpoints		Race Leaders and Programs
Special lectures by race leaders		Labor Problems
		Statistics
		Elementary Dietetics
		Housing Problems
		Home Management
		Social Psychology
		History of Education
		Social Aspects of Education
		Physical Anthropology
		Political and Social Ethics

SENIOR YEAR

REQUIRED	ELECTIVES
American Negro	3
Government and the Immigrant....	3
Supervised Americanization Work (if not previously elected) ¹	9
	Negro and Immigrant Adjustments
	Slavic Culture
	Slavic Oral Language ¹
	Genetics and Eugenics

¹ These courses are open only to students who are specializing in the Americanization work.

SENIOR YEAR—Continued

REQUIRED—Continued

Race Leaders and Programs (if not previously elected)¹..... 6

ELECTIVES—Continued

Social Statistics
Socialism
Child Welfare
Philippine Peoples
Municipal Problems
Mental Diagnosis

For the requirements for teachers' certificate in Americanization Training, see Bulletin of College of Education.

For courses in Home Economics open to students in Americanization course, see statement of Department of Home Economics.

¹ These courses are open only to students who are specializing in the Americanization Work.

VI. A FIVE-YEAR COURSE IN TRAINING FOR DIPLOMATIC AND CONSULAR SERVICE

The degree of Bachelor of Science² is conferred at the end of four years. Students whose programs satisfy the requirements of the Graduate School may receive the degree of Master of Arts at the end of the fifth year.

FIRST YEAR

	Credits
Rhetoric-English	15
Modern language	15
History	10
American Government	5
	45

SECOND YEAR

	Credits
Comparative European Government.....	5
Language	10
Economics	10
Laboratory science	10
Commercial Geography	5
Electives	5
	45

THIRD AND FOURTH YEARS

During the junior and senior years, students will take eighteen credits in starred courses in Political Science, fifteen credits in Economics, fifteen credits in History, and twelve credits in Law.

In foreign languages, 15 credits

Other electives, 15 credits of which 5 must be from the science group.

² Students may obtain the Bachelor of Arts degree by meeting its requirements.

The selection of these courses will be made under direction of the chairman of the committee in charge of the course.

FIFTH YEAR

Research in Economics for the Consular Service

Research in History or Political Science for the Diplomatic Service

Additional starred courses in History, Economics, Law, or Political Science, or work in the Research Bureau.

VII. A FIVE-YEAR COURSE OF TRAINING FOR STATE AND FEDERAL ADMINISTRATION

The degree of Bachelor of Science² is conferred at the end of four years. Students whose programs satisfy the requirements of the Graduate School may receive the degree of Master of Arts at the end of the fifth year.

FIRST YEAR

	Credits
Rhetoric-English	15
Modern language	10 or 15
American Government	5
History	10
Electives	5 or 0
	<hr/>
	45

SECOND YEAR

	Credits
Laboratory science	10
General Economics	10
State and Local Government, or Comparative European Government	5
Municipal Government	5
American History	10
Electives	5
	<hr/>
	45

THIRD AND FOURTH YEARS

POLITICAL SCIENCE	ECONOMICS
Select 45 credits including courses marked ¹	Select 18 credits
Constitutional Law ¹ (Federal or State) .	Public Finance ¹
Legislative Power and Methods ¹	State and Local Taxation ¹
Comparative Administration ¹	Labor Problems
Political Parties	Railway Problems
Principles of Political Science	Statistics
Colonial Government	Business and Government
	Public Utilities
	Financial History of the U. S.

¹ Required work.

² Students may obtain the Bachelor of Arts degree by meeting its requirements.

THIRD AND FOURTH YEARS—*Continued*POLITICAL SCIENCE—*Continued*

Comparative Federal Government
 Elementary Law or Business Law
 Political Power
 Contemporary Political Problems
 Seminar

HISTORY

Select 9 credits
 Economic History of the U. S.
 Recent American History
 History of Minnesota
 History of the West

OTHER ELECTIVES

Select 18 credits
 Introduction to Sociology
 American People
 State Care of Dependents
 Modern Social Reforms
 Public Service Corporations
 Elementary Educational Administration
 Advanced Educational Administration
 General Electives

FIFTH YEAR

Research (Seminar)

Research Bureau

Courses selected from the above list for the third and fourth years.

VIII. A FIVE-YEAR COURSE OF TRAINING FOR MUNICIPAL ADMINISTRATION AND ENGINEERING

The degree of Bachelor of Science is conferred at the end of four years. Students whose programs satisfy the requirements of the Graduate School may receive the Master's degree at the end of the fifth year.

FIRST YEAR

	Credits
Rhetoric-English	15
Modern language	10
Engineering Mathematics	10 or 15
American Government	5
Electives	5 or 0
	45

SECOND YEAR

	Credits
Municipal Government	5
General Economics	10
History	10
Physics	10
Drawing	5
Electives	5
	45

THIRD AND FOURTH YEARS

POLITICAL SCIENCE	ENGINEERING	ECONOMICS	OTHER COURSES
Municipal Corporations ¹	Surveying ¹	Principles of Accounting ¹	Sociology
Municipal Administration ¹	Highways and Pavements ¹	Pub. Finance ¹	Sociology I
Research in Municipal Administration	Water Supply ¹	State and Local Tax ¹	Housing Problems
Business Law	Sanitary Engineering ¹	Public Utilities ¹	Soc. Stat. and Survey
Police Power	City Planning	Labor Prob.	OTHER ELECTIVES
Government of Minnesota	Applied Elect. (51-52)	Business Org. and Management	Gen. Bacteriology ¹
State Const. Law	Prime Movers	Business and Government	Public Health ¹
	Heat and Ventilating for Arch.	Transportation Statistics	

FIFTH YEAR

In this year the student will carry such courses as have not been completed in the preceding years and which seem in the opinion of his adviser to be necessary for the completion of his training. In addition to this he will conduct in the Twin Cities or vicinity, a practical research in Municipal Government and Administration, supplementing this work by work in the library and in the research bureau. The year will thus consist of about equal proportions of class work and research and reference bureau work. If desirable, the student will be allowed to take courses not mentioned above.

IX. FOUR-YEAR COURSE IN ARCHITECTURE AND DECORATION LEADING TO THE DEGREE OF BACHELOR OF SCIENCE

This course offers to students of the College of Science, Literature, and the Arts, the opportunity to prepare themselves for certain lines of work such as drafting, domestic architecture, and interior decoration without taking the full technical course in Architecture.

Students registering in this course should secure the approval of the staff in Architecture and the advice of the staff should be sought with regard to the choice of electives and of special courses in Architecture.

FRESHMAN YEAR

FALL	WINTER	SPRING			
Credits	Credits	Credits			
Mathematics	5	Mathematics	5	Med. History	5
Rhetoric	5	Rhetoric	5	English	5
Language	5	Language	5	Language	5

SOPHOMORE YEAR

Credits	Credits	Credits			
Med. History	5	Elective	5	Elective	5
English	5	Physics	5	Physics	5
Architecture	5	Architecture	5	Architecture	5

¹ Required work.

JUNIOR YEAR

	Credits
Architecture	27
Electives	18

SENIOR YEAR

	Credits
Architecture	36
Electives	9

X. PRE-BUSINESS COURSE

The pre-business course in the College of Science, Literature, and the Arts required for admission to the School of Business for the year 1919-20, is made up as follows:

FIRST YEAR

REQUIRED

First Quarter	Hours	Second Quarter	Hours	Third Quarter	Hours
Rhetoric	5	Rhetoric	5	Rhetoric	5
Economic History....	5	Economic History....	5	Principles of Eco- nomics	5

Laboratory science or Mathematics

* Foreign language

Social science, other than Economics

ELECTIVE

Courses open to freshmen in the College of Science, Literature, and the Arts.

SECOND YEAR

REQUIRED

First Quarter	Hours	Second Quarter	Hours	Third Quarter	Hours
Principles of Eco- nomics	5	Principles of Eco- nomics	5	Business Organiza- tion	5
Accounting	4	Accounting	4	Statistics	5
Psychology	3	Psychology	3		

ELECTIVE

Courses open to sophomores in the College of Science, Literature, and the Arts.

* Students are required to complete a minimum of:

10 hours of laboratory science or mathematics

10 hours of social science other than economics

Sufficient work in a foreign language (if not already acquired in preparatory school) to acquire a working knowledge. The student must satisfy the language department concerned as to his ability to read economic and business literature in that language.

OTHER VOCATIONAL COURSES

For information and advice regarding the selection of studies in preparation for various vocations, the student should consult the heads of the departments concerned. The studies offered by the College are so varied and the opportunities for election are so great that the student who first

forms an intelligent plan can usually find an excellent combination and sequence of courses serving his particular purpose. It is important in preparation for a vocation, not only to secure training in the major subjects, but also in the related subjects.

Women students may consult the Vocational Adviser for Women for information in regard to the selection of courses, the choice of a vocation, and the means of securing professional training. The office in Shevlin Hall is open from nine to twelve during the week preceding the opening of the University, and from eight-thirty to five during the entire academic year. A collection of training school bulletins and general information in regard to topics related to women's occupations is available for use by the students. Women are urged to make appointments with the Vocational Adviser, and to consult the collection of occupational information.

COMBINED ARTS AND PROFESSIONAL COURSES

For the benefit of those who wish to begin a professional course before completing the four-year course in Science, Literature, and the Arts, the following combination courses and short courses are offered.

REGULATIONS GOVERNING COURSES LEADING TO THE BACHELOR OF ARTS DEGREE

1. The degree of Bachelor of Arts shall be voted by the Faculty of the College of Science, Literature, and the Arts.

2. The student shall be registered for the first three years of his course in the College of Science, Literature, and the Arts, and be subject to all the regulations of that College.

3. One full year of professional work may be offered as the equivalent of the senior year (forty-five) of the College of Science, Literature, and the Arts, provided

(a) That the professional courses taken have as a prerequisite at least two years of collegiate work.

(b) That there is no duplication of courses already taken in the College of Science, Literature, and the Arts.

(c) That no substitution of professional courses for courses in the College of Science, Literature, and the Arts has been permitted.

(*Note*.—It will be the policy of the College of Science, Literature and the Arts to introduce into its curriculum those courses in other colleges or schools which in the judgment of the Faculty may properly be credited toward the B.A. degree.)

4. The student shall be required to have not less than twenty-two credits in starred courses in the College of Science, Literature, and the Arts.

5. The student shall be required to secure one hundred eighty credits and one hundred and eighty honor points in the four years.

XI. SIX-YEAR COURSE IN ARTS AND LAW, LEADING TO THE DEGREES OF BACHELOR OF ARTS AND BACHELOR OF LAWS

The work of the first three years of this course is done in the College of Science, Literature, and the Arts and is subject to the regulations which govern the work of other Arts students. During these three years the student must secure not less than one hundred and thirty-five credits, including twenty-two credits in starred courses. The first year of the course in the Law School counts as the equivalent of the fourth year (forty-five credits) of the Arts course. During the four years the student must earn one hundred and eighty honor points.

XII. THE FIVE-YEAR COURSE IN ARTS AND CHEMISTRY

FRESHMAN, SOPHOMORE, AND JUNIOR YEARS

During the first three years of the course the student is registered in the College of Science, Literature, and the Arts, and is subject to its rules. In order to obtain the degree of Bachelor of Arts at the end of his fourth year and Bachelor of Science in Chemistry at the end of the fifth, he must complete at least one hundred and thirty-five credits, including twenty-three credits in starred courses, in the College of Science, Literature, and the Arts, during the first three years. These one hundred and thirty-five credits must embrace the following subjects and groups of subjects:

1. At least twenty-seven credits in Group A; nine credits of this to be Rhetoric 4-5-6, and at least fifteen credits of it to be in German.
2. Eighteen credits or more in Group B.
3. The following courses:

General Inorganic Chemistry and Qualitative Analysis
Quantitative Analysis, two quarters
Technical Drawing, 23-24-25, 27-28-29
General Physics with laboratory, one year
Mathematics 50 and 51 with prerequisite courses.

SENIOR YEAR

During his fourth year he must complete the work required in the junior year of the Four-Year Course in Chemistry of the School of Chemistry.

The degree of Bachelor of Arts is voted by the College of Science, Literature, and the Arts at the end of the fourth year, and the student must present a total of not less than one hundred and eighty credits and one hundred and eighty honor points, including the required work mentioned under (1) and (2), and at least forty-five credits in starred courses. Credits in professional work taken during the fourth year are accepted provided such work has a prerequisite of at least two years of college work in Chemistry.

POST-SENIOR YEAR

The fifth year is the same as the fourth year of the Four-Year Course in Chemistry and upon its completion the student will be entitled to the degree of Bachelor of Science in Chemistry.

XIII. EIGHT-YEAR COURSE IN ARTS AND MEDICINE, LEADING TO THE DEGREES OF BACHELOR OF ARTS AND DOCTOR OF MEDICINE

During the first three years of this course, the student does his work in the College of Science, Literature, and the Arts subject to the regulations governing other Arts students and must secure one hundred and thirty-five credits including twenty-two credits in starred courses. The first year of the course in the Medical School counts as the equivalent of the fourth year (forty-five credits) of the Arts course. During the four years the student must earn one hundred and eighty honor points.

FRESHMAN AND SOPHOMORE YEARS

The following subjects must be included:

Rhetoric-English, 15 credits

Zoology, 12 credits

Qualitative Analysis and Medical Organic Chemistry with the elementary courses prerequisite to them.

French or German sufficient to secure a reading knowledge, to be tested by a committee of the Medical Faculty.

Three quarters work in Physics with prerequisite credits in Mathematics.

The following subjects are recommended as electives: Economics, Free-Hand Drawing, and Psychology.

JUNIOR YEAR

The work of the junior year is elective, subject to the requirement of twenty-two credits in starred courses.

SENIOR YEAR

This year is taken in the Medical School, and is counted toward the B.A. degree.

XIV. SEVEN-YEAR COURSE IN SCIENCE AND MEDICINE, LEADING TO THE DEGREES OF BACHELOR OF SCIENCE AND DOCTOR OF MEDICINE

To be eligible for admission to the Medical School, students in this course must secure in the College of Science, Literature, and the Arts not less than ninety credits including the subjects required during the freshman and sophomore years of the Eight-Year Course in Arts and Medicine.

The arrangement of the work is given below.

Ten credits must be selected from the Social Science Group and Psychology.

Three quarters of Physics are required; a fourth quarter is advised but the student may take an elective instead.

Students who enter with higher algebra elect Trigonometry the first quarter.

Students must select such language work as will enable them to pass an examination demonstrating a reading knowledge of medical French or German, before entering the Medical School.

Electives in the second year or summer quarter may be taken from any courses open to sophomore students in the College of Science, Literature, and the Arts.

A. For those who enter with two years of either French or German.

FIRST YEAR

FALL	WINTER	SPRING
Credits	Credits	Credits
Chemistry 4	Chemistry 4	Chemistry 4
French 3	French 3	French 3
or	or	or
German 4	German 3	German 3
Algebra or	Trigonometry 5	
Trigonometry 5	or	Physics 4
Zoology 4	Physics 4	Zoology 4
	Zoology 4	

SECOND YEAR

Credits	Credits	Credits
Chemistry 4	Chemistry 4	Chemistry 4
Rhetoric 3	Rhetoric 3	Rhetoric 3
Physics 4	Physics 4	
	or	Elective 5
Elective 4-6	Elective 5	Elective 4-5
	Elective 4-5	

B. For those who enter without language and without higher algebra.

FIRST YEAR

FALL	WINTER	SPRING
Credits	Credits	Credits
Chemistry 4	Chemistry 4	Chemistry 4
French 5	French 5	French 5
or	or	or
German 5	German 5	German 5
Algebra 5	Trigonometry 5	Physics 4
Zoology 4	Zoology 4	Zoology 4

SUMMER QUARTER

Credits
Physics 4
Electives 10 to 12

SECOND YEAR

Credits	Credits	Credits
Chemistry 4	Chemistry 4	Chemistry 4
German 5	French 3	French 3
or	or	or
Elective 3 or 5	German 3	German 3
Physics 4	Physics 4	Electives 4 to 6
Rhetoric 3	or	Rhetoric 3
	Electives 4 to 6	
	Rhetoric 3	

JUNIOR AND SENIOR YEARS

The work during these two years is taken in the Medical School, and is credited toward the B.S. degree. To secure this degree the student must have one hundred and eighty credits and one hundred and eighty honor points.

Students who have completed elsewhere two or more years of collegiate or university work which includes the required subjects specified above and which is in other respects the full equivalent of the two years of Academic work required in the seven-year combined course, will be awarded the degree of Bachelor of Science on recommendation of the Faculty of the College of Science, Literature, and the Arts, provided they meet the scholarship requirements stated above. The credit value of work done elsewhere shall be determined by the Administrative Board of the College of Science, Literature, and the Arts, but such credits shall not become effective until the student shall have completed, with the required standing, two full years of work in the Medical School of the University of Minnesota.

**XV. SIX-YEAR COURSE IN ARTS AND DENTISTRY, LEADING
TO THE DEGREES OF BACHELOR OF ARTS AND
DOCTOR OF DENTAL SURGERY**

During the first three years of this course the student does his work in the College of Science, Literature, and the Arts, subject to the regulations governing other Arts students and must secure one hundred thirty-five credits, including twenty-two credits in starred courses. The final year of the course in the College of Dentistry counts as the equivalent of the fourth year (forty-five credits) of the Arts course. During the four years the student must earn one hundred and eighty honor points.

**XVI. FIVE-YEAR COURSE IN ARTS AND NURSING LEADING
TO THE DEGREE OF BACHELOR OF SCIENCE AND
CERTIFICATE IN NURSING**

This course consists of the equivalent of three years of instruction in the College of Science, Literature, and the Arts, and of two years of theoretical and practical work in the University Hospital. During the

work in the College of Science, Literature, and the Arts, the student must earn one hundred and thirty-five credits, including twenty-two credits in starred courses, and one hundred and thirty-five honor points.

The details of the course are given below.

FRESHMAN YEAR

	Credits
Rhetoric-English	15
Foreign language	15
General Chemistry	15
	<hr/>
	45

SOPHOMORE YEAR

	Credits
General Psychology	9
Elementary Physiology	6
General Sociology	5
Social Reform Movements	5
Elementary Pharmacology	3
Principles of Economics	5
Human Anatomy	9
Elective in Economics or Sociology	8
	<hr/>
	50

SUMMER QUARTER

	Credits
Elementary Bacteriology	5
Qualitative Chemistry or Elective	5
Elective (Science, Literature, and the Arts)	5
	<hr/>
	15

THIRD YEAR—FOUR QUARTERS

Practical and theoretical work at Hospital

FOURTH YEAR—FOUR QUARTERS

Practical and theoretical work at Hospital

FIFTH YEAR

Two quarters in the Hospital

Two quarters in class work during which the student must elect courses carrying twenty-five credits in the College of Science, Literature, and the Arts and must complete the requirements for the three years' work in this College stated above. The following work is suggested for this year: History of Education, Educational Psychology, Technique of Teaching, Public Speaking, the Public Health Nursing Course, and electives in Sociology and Economics.

XVII. MILITARY SCIENCE AND TACTICS

REQUIRED WORK

All physically fit male students are required to take military training during the first two undergraduate years of their course unless they have secured such training at an approved institution endorsed by the Military Department. When this course is entered upon it must be carried to completion as a prerequisite for graduation. No credits are allowed for this work.

All students, registered for military training, of any class, are members of the Reserve Officers' Training Corps, and as such are issued all necessary uniform clothing and equipment by the government free of charge.

After completing the two years required students may discontinue military work if they wish.

ELECTIVE WORK

Students who have completed the two years of required military work, and are selected for advanced work by the Professor of Military Science and Tactics, and who sign an agreement with the Government, to continue the work for their remaining course in college but not to exceed two years, are eligible for the advanced course in Military Training, which is prescribed in General Orders 49, W. D. 1916, and requires five hours per week—three practical and two theoretical. Three credits for each quarter are allowed for this work.

All advanced course students should take courses in International Law, Military Law, and Military History. These courses are given by the Departments of Political Science and History and are arranged especially for the Military Department.

All members of the advanced course receive their uniforms, equipment, and commutation for subsistence at the rate of forty cents per day during the school year.

All students who complete the advanced course in the Military Department and who graduate from the University, will, if recommended by the Professor of Military Science and Tactics and the President of the University, be commissioned by the President of the United States, in the Officers' Reserve Corps.

XVIII. SIX-YEAR COURSE IN ARTS AND ARCHITECTURE

Preliminary announcement is made of a course designed to combine with the full technical course in Architecture a broad cultural training in languages, history, and the social sciences. The course will lead to the degree of Bachelor of Science at the end of four years and to either Master of Science or an appropriate degree in architecture at the end of six years.

Students wishing to elect this course should consult the Department of Architecture. For the first two years the requirements will not differ

materially from those laid down in the course in Architecture and Decoration. (See page 33.)

EXPLANATION OF COURSE NUMBERS

All undergraduate courses are numbered from 1 to 100. All courses open to undergraduates and graduates are numbered from 101 to 200. Strictly graduate courses are numbered from 201 up.

Department. Members of the Departments.

DEPARTMENTAL STATEMENTS

AMERICANIZATION TRAINING AND ANTHROPOLOGY

Professors ALBERT ERNEST JENKS, Chairman, ARTHUR J. TODD; Associate Professors LUTHER L. BERNARD, MANUEL C. ELMER; Assistant Professors ROSS L. FINNEY, OSCAR W. JUNEK, GUSTAV A. LUNDQUIST; Instructor BERTHA W. CLARK.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	5	Introduction to Anthropology	All ¹	None
2	3	General Anthropology.....	Soph., jr., sr.	1
5	3	General Immigration.....	Soph., jr., sr.	1
41-42 ²	2	Slavic Language.....	Jr., sr., gr.	Three courses including 140
*112	3	The American Negro.....	Jr., sr., gr.	Two courses
*113	3	The Older Immigrants.....	Jr., sr., gr.	Two courses
*114	3	The Newer Immigrants.....	Jr., sr., gr.	Three courses
*115	3	Americanisms and Assimilation	Jr., sr., gr.	Three courses
*118 ³	3	Government and the Immigrant.....	Jr., sr., gr.	Course 5 or 10 credits in Political Science
*125 ²	3	Methods of Americanization..	Jr., sr., gr.	Three courses
*126 ²	3	Organization of Americanization Work.....	Jr., sr., gr.	*125
*127 ²	3	Technique of Teaching Adults	Jr., sr., gr.	*125
*131-*132-	3	Supervised Americanization Work.....	Jr., sr., gr.	Three courses including *125 or parallel
*133 ³				
*137-*139 ²	3	Race Leaders and Programs..	Jr., sr., gr.	Three courses
*140	2	Slavic Culture.....	Jr., sr., grad.	3 courses including 114

¹ For freshmen this course is open during the third quarter.

² These courses are open only to students who are specializing in Americanization Work.

³ Same course as *118 in Political Science.

1. INTRODUCTION TO ANTHROPOLOGY. Origin and development of mankind; activities, organization and institutions of society; determinants of social types; the bearing of anthropology and sociology on present-day problems and thought. (Same Course as number 1 in Sociology.) JENKS, TODD, BERNARD, ELMER, FINNEY, LUNDQUIST.
2. GENERAL ANTHROPOLOGY. Theories, facts, and factors in the origin and distribution of human races. Early world migrations. Important anthropological problems. JENKS.
4. CULTURAL ANTHROPOLOGY. Origin and early development of the most important activities, and institutions which had their beginning among primitive man. (Not offered in 1919-20.) JENKS.
5. GENERAL IMMIGRATION. Facts of recent world migrations. Chief causes of emigration from old nests, and of immigration to the

United States; federal and state problems of immigrant legislation, control and distribution.

41-42. SLAVIC ORAL LANGUAGE. Slavic linguistic families. A speaking knowledge of a Slavic language is taught illustrating the methods and technique of teaching our language to adult foreigners in America. JUNEK.

*108. PHILIPPINE PEOPLES. Comparative study of the four large ethnic and cultural groups of people in the Philippine Islands; policy of the insular government as it affects American home interests in the Orient. (Not offered in 1919-20.) JENKS.

*110. PHYSICAL ANTHROPOLOGY AND AMALGAMATION. Theory of evolution as applied to natural and cultural man. Eugenics in theory, law, and practice. Studies in the amalgamation of races. (Not offered in 1919-20.) JENKS.

*112. THE AMERICAN NEGRO. Development of the American Negro; his characteristics, conditions, and developing tendencies. Negro and immigrant adjustments. JENKS.

*113. THE OLDER IMMIGRANTS. Characteristics, contributions, and distribution of the older immigrant peoples in America, their modification and importance to us. JENKS.

*114. THE NEWER IMMIGRANTS. Characteristics, contributions, and distribution of the newer immigrant peoples in America, their modification and importance to us. JENKS.

*115. AMERICANISMS AND ASSIMILATION. Essential and unique historical Americanisms, and their value and virility for the future in America. Conditions and facts of assimilation. JENKS.

*117. THE IMMIGRANT WOMAN. The peculiar problems of the woman immigrant in personal service, in industrial groups, in the home, and out of regular employment. (Not offered in 1919-20.) CLARK.

*118 GOVERNMENT AND THE IMMIGRANT. Legal and administrative aspects of Americanization. Federal and state laws affecting immigration, citizenship, and naturalization; practical administration of these laws through governmental agencies; political experiences of the foreign-born. (Not offered 1919-20.)

*125. METHODS OF AMERICANIZATION. Practical methods of Americanization in use in the United States, together with facts and conditions of their success and failure. JENKS, CLARK, JUNEK.

*126. ORGANIZATION OF AMERICANIZATION WORK. Existing Americanization organizations of federal, state, municipal, and neighborhood

groups. Methods of organizing new groups, and of interorganic co-operation. JENKS, CLARK, JUNEK.

*127. TECHNIQUE OF TEACHING ADULTS. Methods of teaching adults—the foreign-speaking, the illiterate, the fatigued—in keeping with the dignity of mature years, and the mental processes of mature minds of foreigners. CLARK, JUNEK.

*131-132-133. SUPERVISED AMERICANIZATION WORK. Practical field work among foreign peoples in our vicinity. CLARK, JUNEK.

*137-*139. RACE LEADERS AND PROGRAMS. Studies of racial or national leaders. Preparation of programs, in English, from racial data as means of contact for mutual understanding between Americans and various racial groups in America. CLARK.

*140. SLAVIC CULTURE. The basic Slavic institutions. Characteristic of Slavic culture. JUNEK.

ANIMAL BIOLOGY

Professors HENRY F. NACHTRIEB, Head; HAL DOWNEY, JOHN B. JOHNSTON, WILLIAM A. RILEY, THOMAS S. ROBERTS, CHARLES P. SIGERFOOS; Associate Professor ELMER J. LUND; Assistant Professors ROYAL N. CHAPMAN, OSCAR W. OESTLUND; Instructors GEORGE D. ALLEN, ADOLPH RINGOEN; Teaching Fellow ROLAND F. HUSSEY; Assistants JOHN A. CEDERSTROM, L. B. NELSON, EMILY H. PAYNE, EDNA M. WOLF.

For B.A. with Honors. Freshman year, Courses 1-2 and 9 or 23 or 35 or 43. Sophomore year, elect from courses open to sophomores. Junior year, elect a junior subject that is to be continued during the senior year.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	10†	General Zoology	All	None
5-6-7	12†	General Zoology	Pre-medical	None
9-10	10†	Histology and Embryology	Soph., jr., sr.	1, 2
17-18	10†	General Physiology	Soph., jr., sr.	15 credits in Ani. Biol. or 10 credits in Ani. Biol. and 10 credits in Chem. or Physics.
23	5	Morphogenesis and Behavior of Organisms...	Fr.,soph.,jr.,sr.	Same as for 17, 18.
27	5	Comp. Anatomy.....	Fr.,soph.,jr.,sr.	1, 2
35	5	Gen. Embryology.....	Fr.,soph.,jr.,sr.	1, 2
37-38-39	9†	Gen. Entomology.....	Soph.,jr.,sr.	1, 2
43	5	Introduct. Entomology..	Fr.,soph.,jr.,sr.	1, 2
43	5	Introduct. Entomology..	Fr.,soph.,jr.,sr.	1, 2

† All quarters must be completed before credit is given for any quarter.

No.	Credits	Title	Offered to	Prereq. courses
44	5	Animal Parasites.....	Soph., jr., sr.	1, 2
45	3	Insects and Disease.....	Soph., jr., sr.	1, 2 and 44
59	5	General Ecology.....	Fr., soph., jr., sr.	1, 2
*102	3	Morphol. Invertebrates.	Jr., sr.	1, 2 and 5 other credits in Animal Biology
*107	3	Protozoology.....	Jr., sr.	1, 2 and 5 other credits in Ani. Biol.
*109-110	10†	General Physiology.....	Jr., sr.	20 credits in A. B.
114-115	6†	Ornithology.....	Jr., sr.	1, 2
*117-118-				
119	9†	Ecology of Insects.....	Jr., sr., grad.	1, 2 and 43
*124	5	Advanced Ecology.....	Jr., sr., grad.	117, 119, 119
*125-126-				
127	9†	Advanced Entomology..	Jr., sr., grad.	1, 2; 37, 38 and 43.
*130	3	Biology Aphididae.....	Jr., sr., grad.	1, 2 and 10 additional credits in An. Biol.
139	5	Histol. and Development of Insects.....	Soph., jr., sr.	1, 2 and 37, 38 or 43
*149-150-				
151	9†	Blood of Vertebrates....	Sr., grad.	Histology and Embryology, reading knowledge of French and German
*153-154-				
155	9†	Hematology.....	Jr., sr.	Histology, Embryology
175	3	Nature Study.....	Jr.	1, 2
*182	3	Genetics and Eugenics..	Jr., sr., grad.	1, 2 or Botany 1, 2
*197-198-				
199s	9 or 18	Problems.....	Sr., grad.	1, 2 and special requirements

† All quarters must be completed before credit is given for any quarter.

1-2. GENERAL ZOOLOGY. A survey of the animal kingdom, emphasizing the principles of development and structure in relation to functions and habit, heredity and evolution, and the animals of economic importance. Lectures, quizzes, and laboratory. SIGERFOOS, NACHTRIEB, LUND, ALLEN, RINGOEN.

5-6-7. GENERAL ZOOLOGY. Same as 1, 2 for pre-medical students.

9-10. HISTOLOGY AND EMBRYOLOGY. A comparative microscopic study of the origin and structure of the tissues of vertebrates and invertebrates, and of the organs of mammals. Textbook, lectures, and laboratory. DOWNEY.

17-18. GENERAL PHYSIOLOGY. Physical and chemical properties of living protoplasm and cells. Various organisms which show to the best advantage the nature of physiological processes and introduce the student to quantitative experimental methods in biology. Laboratory lectures, reading. LUND.

23. MORPHOGENESIS AND THE BEHAVIOR OF ORGANISMS. Physiology of development of the egg. Regeneration. Production of heat, light,

electricity in animals. Comparative physiology of the nervous system, sense organs, and reactions in lower animals. Laboratory, lectures, and reading. LUND.

27. COMPARATIVE ANATOMY OF VERTEBRATES. Lectures, quizzes, and laboratory work.

35. GENERAL EMBRYOLOGY. A survey of general embryology and the organogeny of the vertebrates. Conference, reference, and laboratory work. NACHTRIEB.

37-38-39. GENERAL ENTOMOLOGY. Elements of entomology leading up to discussion of the principles of taxonomy and their application to the classification of insects. OESTLUND.

43. INTRODUCTORY ENTOMOLOGY. The structure, development, and classification of insects. An introductory course in entomology and preparatory for courses in economic entomology. OESTLUND.

44. ANIMAL PARASITES AND PARASITISM. Lectures and laboratory work. A consideration of the origin and biological significance of parasitism, and the structure, life history, and economic relations of representative parasites. Methods of control and prevention will be emphasized. RILEY.

45. RELATION OF INSECTS TO DISEASE. The causation and transmission of disease by insects and other arthropods. Life history, habits, and methods of control of hominoxious species. RILEY.

59. GENERAL ECOLOGY. A general course covering the relationships of animals, animal societies, and faunas to the inorganic and organic factors of the environment. The course consists of lectures, assigned reading, recitations, laboratory and field work. CHAPMAN.

*102. MORPHOLOGY OF INVERTEBRATES. An intensive study of the crustacea and some of the smaller phyla of the animal kingdom. Mainly reference and laboratory work. SIGERFOOS.

*107. PROTOZOLOGY. Lectures, reference, and laboratory work on the structure and life histories of Protozoa, with special reference to the relation of the Protozoa to diseases of animals. SIGERFOOS.

*109-110. GENERAL PHYSIOLOGY. A thoro survey of fundamental physiological processes in organisms. Based on Bayliss's *Principles of General Physiology*. Laboratory, lectures, and reading. LUND.

*114-115. ORNITHOLOGY. Study of the structure, classification, and habits of birds with special reference to birds of Minnesota. Considerable time devoted to field study. Bird or field-glasses and handbook required. Laboratory, lectures, and quizzes. Class limited to ten. ROBERTS.

- *117-118-119. ECOLOGY OF INSECTS. General principles of ecology with special reference to the insects of Minnesota. Lectures, laboratory, assigned reading, and field work. CHAPMAN.
- *124. ADVANCED ECOLOGY. Similar to Course 117-118-119 with special field work. CHAPMAN.
- *125-126-127. ADVANCED ENTOMOLOGY. Advanced work in the lines of morphology and classification of insects, with lectures on the history of entomology. OESTLUND.
- *130. BIOLOGY AND TAXONOMY OF THE APHIDIDAE. Intensive study of the natural history, bibliography, and classification of the Aphididae. OESTLUND.
- *139. HISTOLOGY AND DEVELOPMENT OF INSECTS. Lectures and laboratory work on the histology, embryonic and postembryonic development of insects. RILEY.
- *149-150-151. BLOOD OF VERTEBRATES. A comparative study of blood and blood-forming organs of vertebrates. A portion of time to be devoted to research. DOWNEY.
- *153-154-155. HEMATOLOGY. Primarily for medical students, but open to others with proper qualifications. Lectures and laboratory work on the blood and blood-forming organs of man and mammals. DOWNEY.
- 175. NATURE STUDY. Discussions, references, field and laboratory work. Especially for the fitting of teachers in the secondary schools. SIGERFOOS.
- *182. GENETICS AND EUGENICS. Facts and theories of heredity and the application of the laws governing natural inheritances for the improvement of the race. Lectures, references, quizzes, and demonstrations. (Not offered 1919-20.)
- *191. HISTORY OF ZOOLOGY. (Not offered 1919-20.)
- *197-198-199. PROBLEMS. Advanced work in some special line. CHAPMAN, DOWNEY, JOHNSTON, LUND, NACHTRIEB, OESTLUND, RILEY, SIGERFOOS.

ARCHITECTURE

Professor FREDERICK M. MANN, Chairman; Assistant Professors ROY C. JONES, JAMES H. FORSYTHE, SAMUEL C. BURTON; Instructors JEFFERSON M. HAMILTON, JAMES TROY PETERKIN; Special Lecturer JOHN O. CEDERBERG.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
4	5	Elements of Arch.....	Soph.	Soph. standing
5	5	Elements of Arch.....	Soph.	Soph. standing
6	5	Elements of Arch.....	Soph.	Soph. standing.
10	2	Freehand Drawing.....	Soph. Arch.	None
11	2	Freehand Drawing.....	Soph. Arch.	10
12	2	Freehand Drawing.....	Soph. Arch.	11
15	4	Arch. Design,Elementary	Soph. Arch.	6
16	4	Arch. Design,Elementary	Soph. Arch.	15
17	4	Arch. Design,Elementary	Soph. Arch.	16
21	3	Specifications and Work- ing Drawings.....	Soph. Arch.	6
22	3	Specifications and Work- ing Drawings.....	Soph. Arch.	21
23	3	Specifications and Work- ing Drawings.....	Soph. Arch.	22
51	3	Freehand Drawing.....	Jr. Arch.	10
52	3	Freehand Drawing.....	Jr. Arch.	11
53	3	Freehand Drawing.....	Jr. Arch.	12
55	6	Arch. Design Intermed..	Jr. Arch.	17
56	6	Arch. Design Intermed..	Jr. Arch.	55
57	6	Arch. Design Intermed..	Jr. Arch.	56
61	3	Freehand Drawing.....	Sr. Arch.	51
62	3	Freehand Drawing.....	Sr. Arch.	52
63	3	Freehand Drawing.....	Sr. Arch.	53
65	2	Materials of Construction	Sr. Arch.	23
66	2	Materials of Construction	Sr. Arch.	23
71	6	Arch. Design Advanced..	Sr. Arch.	57
72	6	Arch. Design Advanced..	Sr. Arch.	71
73	6	Arch. Design Advanced..	Sr. Arch.	72
*81	2	Business Practice.....	Sr. Arch.	65
*82	2	Landscape Design.....	Sr. Arch.	57
*83	2	Decoration and Allied Arts.....	Sr. Arch.	53
*85	2	Architectural History (Ancient and Renais- sance).....	Jr. Arch.	4, 5, 6
*86	2	Architectural History (Ancient and Renais- sance).....	Jr. Arch.	85
*87	2	Architectural History (Ancient and Renais- sance).....	Jr. Arch.	86
*88	2	Architectural History (Med. and Modern)...	Sr. Arch.	87
*89	2	Architectural History (Med. and Modern)...	Sr. Arch.	88
*90	2	Architectural History (Med. and Modern)...	Sr. Arch.	89
*91	2	History of Sculpture and Paint.....	Sr. Arch..	87

NOTE.—All courses open to students in the course in Architecture and Design are open to all juniors and seniors who have the prerequisites.

4-5-6. ELEMENTS OF ARCHITECTURE. Beginning study for students in the Science, Literature, and the Arts course in Architecture and Decoration with addition of instrumental and freehand drawings. MANN, HAMILTON.

10-11-12. **FREEHAND DRAWING.** Drawing with charcoal, pencil, pen and ink, and color from architectural ornament and details of the figure; drawing from memory. The course is arranged to give an appreciation of balance in light and shade. PETERKIN, BURTON.

15-16-17. **ARCHITECTURAL DESIGN.** Original problems dealing in general with elements of elevation and their composition into simple architectural units. Sketch problems dealing with elementary plan compositions. Individual criticism and library research. FORSYTHE.

21-22-23. **SPECIFICATIONS AND WORKING DRAWINGS.** Preparation of plans and detailed working drawings of small frame and small frame and small masonry buildings. Specifications, measured drawings of important details of construction. Written reports from buildings under construction. CEDERBERG.

51-52-53. **FREEHAND DRAWING.** Drawing from the antique in charcoal, pen and ink, pastel, and pencil. Painting from still life in oils and water-color. Study of the elementary principles of composition and of color arrangement. PETERKIN.

55-56-57. **ARCHITECTURAL DESIGN. INTERMEDIATE.** Original problems dealing in buildings. Sketch problems dealing with plain composition. Individual and general criticism and library research. JONES.

61-62-63. **FREEHAND DRAWING.** Drawing and painting from the antique and from life; figure composition. Study of draperies in preparation for work in decoration, figure composition and of the application of the figure to mural decoration. Modelling in clay. BURTON.

65-66. **MATERIALS OF CONSTRUCTION.** The properties, processes of manufacture of building materials, and their uses in construction. MANN.

71-72-73. **ARCHITECTURAL DESIGN.** Original problems dealing with composition of single buildings or groups of buildings and those of special character. Subjects of decorative or imaginative interest. Sketch problems. JONES.

*81. **BUSINESS PRACTICE.** Relations of the architect, owner, and builder; forms of contracts, professional ethics, and office administration. MANN.

*82. **LANDSCAPE DESIGN.** Theory and practice of landscape design. Lectures and design problems.

*83. **DECORATION AND THE ALLIED ARTS.** Color theory. History of decoration and ornament, furniture, weaving, glass making, etc. PETERKIN.

*85. **ARCHITECTURAL HISTORY.** Technical study of the architecture of Ancient Egypt, Assyria, Persia, and Greece, with emphasis on the latter. Study of political, social, and economic conditions affecting

the architecture of this period. Illustrated lectures and library research. FORSYTHE.

*86. ARCHITECTURAL HISTORY. Technical study of the architecture of ancient Rome and of the Renaissance in Italy to the end of the fifteenth century. Study of political, social, and economic conditions. Illustrated lectures and library research. FORSYTHE.

*87. ARCHITECTURAL HISTORY. Technical study of the architecture of the Renaissance of the sixteenth and seventeenth centuries in Italy. Technical study of the architecture of the Renaissance in Spain. Illustrated lectures and library research. FORSYTHE.

*88. ARCHITECTURAL HISTORY. Technical study of the architecture of the Middle Ages; in Italy, France, and England; sources and influences in the development of the Romanesque and Gothic styles, particularly in France. Lectures and library research. MANN.

*89. ARCHITECTURAL HISTORY. Technical study of developed Gothic architecture in France and England. Early Renaissance architecture in France and England, its sources and effecting influences. Lectures and library research. MANN.

*90. ARCHITECTURAL HISTORY. Technical study of the development of architecture from the seventeenth century to and including the present time, particularly in France, England, and America. Lectures and library research. MANN.

*91. HISTORY OF SCULPTURE AND PAINTING. Historical study of ancient, Renaissance, and modern sculpture and of the Renaissance and modern schools of painting. PETERKIN.

ASTRONOMY

Professor FRANCIS P. LEAVENWORTH, Head; Assistant Astronomer WILLIAM O. BEAL.

REQUIREMENTS OF THE DEPARTMENT

For B.A. degree with Honors, the general requirements, Courses 51-52-53, 101-102-103 (as an eighteen credit course), and nine credits in Physics.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
7	3	Navigation	Soph., jr., sr.	Consult Department
11	5	Descriptive Astr.....	Soph., jr., sr.	None
25	5	Stellar Astronomy.....	Soph., jr., sr.	11
*51-52-53	9	General Astronomy.....	Jr. and sr.	15 credits in Math. or Phys. Sci. in- cluding Trigo- nometry

No.	Credits	Title	Offered to	Prereq. courses
*62	3	Elements of Practical Astronomy	Jr., sr.	Astr. 11 or 51, and 10 credits in Math. including Trigonometry
*101-102-	103	9 or 18 Practical Astr.	Jr., sr., grad.	Ast. 11 or 51 and Math. 50
*140	3	Method of Least Squares	Sr., grad.	Math. *51

7. NAVIGATION. A study of the principles of piloting, dead reckoning, nautical astronomy, rules of the road, etc. This course prepares men for positions as ensigns and as officers in the merchant marine. LEAVENWORTH.

11. DESCRIPTIVE ASTRONOMY. Lectures and recitations on the general principles and fundamental facts of astronomy, with particular emphasis on the solar system. Illustrated by lantern slides, simple problems, naked eye and telescopic observations. LEAVENWORTH, BEAL.

25. STELLAR ASTRONOMY. Review of present state of knowledge concerning the stars. Positions, proper motions, parallaxes, spectra, radial velocities, group and stream motions, brightness, color, and temperatures of the stars. Binaries. Variables. Clusters. Nebulae. Theories of stellar evolution. LEAVENWORTH, BEAL.

*51-52-53. GENERAL ASTRONOMY. A thoro study of the general principles of astronomy, illustrated by lantern slides, simple problems, and telescopic observations. LEAVENWORTH, BEAL.

*62. ELEMENTS OF PRACTICAL ASTRONOMY. Theory and use of astronomical instruments in determining time, latitude, longitude, azimuth, and positions of heavenly bodies. BEAL.

*101-102-103. PRACTICAL ASTRONOMY. Theory and use of astronomical instruments in determining time, latitude, longitude, positions of heavenly bodies; astronomical photography, with measures of plates; study of the method of least squares. LEAVENWORTH.

*140. METHOD OF LEAST SQUARES. The combination and adjustment of observations and the discussion of their precision as applied especially to engineering, physics, and astronomy. LEAVENWORTH.

BACTERIOLOGY AND IMMUNOLOGY

MEDICAL SCHOOL

Professor WINFORD P. LARSON, Chairman; Assistant Professor ARTHUR T. HENRICI; Instructor ANNE G. BENTON; Assistant ROBERT G. GREEN.

COURSES

No.	Title	Credits	Offered to	Prereq. courses
6	Elementary Bacteriology.....	3	All	None
*105	3 Special Bacteriology.....		4th-year Medi- cal students and others	104 (Medical Bulletin)
*115	1½ Course in Immunity.....		5th- and 6th year ¹ Medi- cal students	
117	1½ The Higher Bacteria ²		All	6, 105

¹ Limited to ten students in each quarter.

² Limited to six students. Fall quarter.

For additional courses see the Bulletin of the Medical School.

6. ELEMENTARY BACTERIOLOGY. Lecture and laboratory course. The principles and technique of general bacteriology. Studies in the morphologic and biologic characters of the common bacteria. Preparation of culture media. Disinfectants and disinfection. Bacteriology of water and food products. LARSON, BENTON, GREEN.

*105. SPECIAL BACTERIOLOGY. The study of pathogenic bacteria, especially in relation to definite diseases; bacteriological methods in clinical diagnosis; principles of infection and immunity, with practical application of serum reactions. Fourth-year medical students and others. Prerequisite: general bacteriology,¹ 72 hours; three credits. LARSON, BENTON, and Assistants.

ELECTIVE COURSES

*115. COURSE IN IMMUNITY. Laws of hemolysis. Quantitative relationship between antigen and antibody. Wassermann reaction. Opsonins. Vaccines. Precipitin reaction. Abderhalden reaction. Anaphylaxis. Fifth- and sixth-year medical students. Limited to ten students in each quarter. 48 hours; one and one-half credits. LARSON.

117. THE HIGHER BACTERIA. Study of morphology, cultivation, and classification of trichomycetes, yeasts, and moulds. Study of the mycoses. Limited to six students. Fall quarter. HENRICI.

BOTANY

Professors CARL OTTO ROSENDAHL, Chairman; ELIAS J. DURAND, LEE I. KNIGHT, JOSEPHINE E. TILDEN; Associate Professor FRÉDERIC K. BUTTERS; Assistant Professors WILLIAM S. COOPER, NED L. HUFF; Instructor ARTHUR M. JOHNSON.

¹ This is Course 104, Medical Bulletin, where prerequisites are given: general chemistry and botany or zoology.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2 ¹	10†	General Botany	All	None
3	3	General Botany	All	None
7	5	Taxonomy of Flowering Plants	All	2
11	5	Algae and Fungi	Soph., jr., sr.	2
12	5	Bryophytes and Pteridophytes	Soph., jr., sr.	2
13	5	Gymnosperms and Angio- sperms	Soph., jr., sr.	7 or 12
17	5	Anatomy of Vascular Plants..	Soph., jr., sr.	2
*51	3	Histological Methods	Jr., sr.	15 credits.
*52	5	Plant Physiology	Jr., sr.	15 credits
*53	5	Botany of Economic Plants...	Jr., sr.	15 credits
*54	5	Elementary Ecology	Jr., sr.	52
*61	5	Teachers' Course	Jr., sr.	20 credits including 7
*105	5	Algae	Jr., sr., grad.	11
*110	5	Gymnosperms	Jr., sr., grad.	7 and 13
*113-4-5	9	Advanced Taxonomy	Jr., sr., grad.	7
*118-119	6	Cytology	Jr., sr., grad.	51
*123	3	Algae: Blue-green	Jr., sr., grad.	105
*124	3	Algae: Green	Jr., sr., grad.	105
*125	3	Algae: Brown	Jr., sr., grad.	105
*126	3	Algae: Red	Jr., sr., grad.	105
*131	5	Field Ecology	Sr., grad.	54
*132	5	Ecological Anatomy	Sr., grad.	54
*133	5	Forest Geography of North America	Sr., grad.	54
*141	5	Physical Phases of Plant Physiology	Sr., grad.	52 and Gen. Org. Chem.
*142	5	Plant Metabolism	Sr., grad.	52 and Gen. Org. Chem.
*143	5	Plant Metabolism and Growth	Sr., grad.	52 and Gen. Org. Chem.

† Both quarters must be completed before credit is given for either.

1-2-3. **GENERAL BOTANY.** Principles of subject. Survey of organs of flowering plant followed by study of internal structure and physiology. Representatives of algae, fungi, liverworts, mosses, gymnosperms, and angiosperms examined with reference to tracing evolution of vegetable kingdom. **DURAND, BUTTERS, HUFF, and Assistants.**

7. **TAXONOMY OF FLOWERING PLANTS.** A general study of the classification and relationships of flowering plants. Laboratory and field practice in the determination of species, together with lectures and quizzes. **ROSENDAHL.**

11. **GENERAL MORPHOLOGY OF ALGAE AND FUNGI.** A general survey of the structure, evolution, and classification of the algae and fungi. Lecture, laboratory, and field work. **TILDEN.**

12. **GENERAL MORPHOLOGY OF BRYOPHYTES AND PTERIDOPHYTES.** A general survey of the structure, evolution, and classification of the liverworts, mosses, and ferns. **HUFF.**

¹ Students entering college with a year of high-school botany satisfactory to the Department may be admitted directly into Course 2. All such must present to the Department before registration, their high-school notebook and a statement from their teacher showing the amount and proficiency of their work.

13. GENERAL MORPHOLOGY OF GYMNOSPERMS AND ANGIOSPERMS. A general survey of the structure, evolution, and classification of seed plants. BUTTERS.

17. ANATOMY OF VASCULAR PLANTS. A study of the microscopic structure of vascular plants, the cell, tissues and tissue systems with particular attention to the development and evolution of the vascular system in the root, stem, and leaf. BUTTERS.

*51. HISTOLOGICAL METHODS. Training in methods used in the preparation and preservation of class material. Special attention is given to methods of killing, imbedding, sectioning, staining and mounting. DURAND.

*52. PLANT PHYSIOLOGY. An introductory course giving a general survey of plant functions. KNIGHT.

*53. BOTANY OF ECONOMIC PLANTS. A survey course treating the most important botanical features of the common economic plants. KNIGHT.

*54. ELEMENTARY ECOLOGY. An introduction to the study of plants and their environment; investigation of the habitat; its effects upon plants as individuals and in mass; plant communities; plant successions. Laboratory and field work, lectures and discussions. COOPER.

*61. TEACHERS' COURSE. A course dealing with principles and methods of teaching botany in high schools, including planning and construction of the laboratory and the greenhouse, laboratory management and equipment, and the collection and preparation of botanical material. JOHNSON.

*105. ALGAE. A study of freshwater forms, based on collections made by the class. Lectures, laboratory, and field work. TILDEN.

*107. MORPHOLOGY AND TAXONOMY OF THE BRYOPHYTES. A special study of the structure and classification of the liverworts and mosses. (Not offered in 1919-20.) DURAND.

*108. MORPHOLOGY AND TAXONOMY OF THE PTERIDOPHYTES. An intensive study of lycopods, ferns, and their allies, their structure and history, with special attention to the classification of living forms. Lectures, reference reading, and laboratory work. (Not offered in 1919-20.) BUTTERS.

*110. MORPHOLOGY AND TAXONOMY OF THE GYMNOSPERMS. An intensive study of cycads, conifers, and their allies, their structure and history, with special attention to the classification of living forms. Lectures, reference reading, and laboratory work. BUTTERS.

*113-114-115. ADVANCED TAXONOMY. An advanced course in which special attention is given to the taxonomy of difficult natural groups, involving systematic principles and practice, rules of nomenclature, systems of classification, etc. ROSENDAHL.

*118-119. CYTOLOGY. A survey of cell structure and the various phenomena of division, fusion, and metamorphosis, together with a review of the history of cytological investigation. Methods of cytological research indicated in the laboratory. ROSENDAHL.

*123. MORPHOLOGY AND TAXONOMY OF THE ALGAE. Myxophyceae. Advanced studies in selected groups of the blue-green algae. Lectures, reports, discussions of current literature, and laboratory work. TILDEN.

*124. MORPHOLOGY AND TAXONOMY OF THE ALGAE. Chlorophyceae. Advanced studies in selected groups of the green algae. Lectures, reports, discussions of current literature, and laboratory work. TILDEN.

*125. MORPHOLOGY AND TAXONOMY OF THE ALGAE. Phaeophyceae. Advanced studies in selected groups of the brown algae. Lectures, reports, discussions of current literature, and laboratory work. TILDEN.

*126. MORPHOLOGY AND TAXONOMY OF THE ALGAE. Rhodophyceae. Advanced studies in selected groups of the red algae. Lectures, reports, discussions of current literature, and laboratory work. TILDEN.

*131. FIELD ECOLOGY. A careful study of the local plant communities and successions, followed by written report, and by a study of the general principles of plant association and succession. COOPER.

*132. ECOLOGICAL ANATOMY. The individual plant and its parts as related to environment: greenhouse and microscopic study of special plant forms and structures, their causes and significance. COOPER.

*133. FOREST GEOGRAPHY OF NORTH AMERICA. Principles of plant distribution discussed, followed by detailed study of forest regions of North America, through reading, discussion, lantern slides, distribution maps, microscopic work, written reports. Should be preceded by Field Ecology, but not necessarily. COOPER.

ADVANCED PLANT PHYSIOLOGY

*141. PHYSICAL PHASES OF PLANT PHYSIOLOGY. A course dealing with the intake of materials and their translocation, also the energy relations of the plant. KNIGHT.

*142. PLANT METABOLISM. A course dealing with the synthesis of plant food, its transformation and utilization by the plant. KNIGHT.

*143. PLANT METABOLISM AND GROWTH. Continuation of Course 142, also introducing certain fundamental phases of growth. KNIGHT.

PLANT PATHOLOGY AND BOTANY

COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS

Professors EDWARD M. FREEMAN, Chairman; ELVIN C. STAKMAN; Assistant Professor GUY R. BISBY; Instructors ROBERT C. DAHLBERG, ALVIN H. LARSON, ALLEN G. NEWHALL; Extension Specialist ARNE G. TOLAAS.

GENERAL STATEMENT

For specialization in this Department, see special requirements in Course of Study.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
<i>Introductory Courses</i>				
1	5	Plant Pathology.....	Jr., sr.	Bot. 10 cred.
6	3	Plant Pest Control.....	Jr., sr.	1, Ent. 3.
7-8	6	Weeds and Grasses	Soph., jr., sr.	Bot. 10 cred.
9,	3	Weeds and Seed Testing.	Soph., jr., sr.	Bot. 10 cred.
12	3	Seed Problems.....	Jr., sr.	9
<i>Advanced Courses</i>				
*105-106-				
107	9	Mycology.....	Jr., sr.	Bot. 7, 11 or equiv.
*108-109	6	Methods.....	Jr., sr.	1, Bact. 6.
*110	3	Principles of Pathology..	Jr., sr.	1, Bact. 6.
*111	3	Diseases of Field Crops..	Jr., sr.	1
*112.	3	Diseases of Fruit and Vegetable Crops.....	Jr., sr.	1

INTRODUCTORY COURSES

1. PLANT PATHOLOGY. Elementary study of plant diseases due to fungi, bacteria, and slime molds; life histories and preventive methods. Lectures, laboratory, and reference. Not open to those who have completed 10. FREEMAN, STAKMAN, BISBY.
6. PLANT PEST CONTROL. The theory and practice of control of insect and fungous pests of crop plants. Practical applications. Same as Ent. 16. Not open to those who have completed 14. STAKMAN, BISBY, NEWHALL.
- 7-8. WEEDS AND GRASSES. Agricultural and applied botanical study of weeds and grasses with special reference to agricultural importance. DAHLBERG.
9. WEEDS AND SEED TESTING. Detailed study of seed-testing methods and seed legislation. Weed and crop seeds and weed plants studied with special reference to identification. DAHLBERG, LARSON.
10. FOREST PATHOLOGY. Elementary study of plant diseases due to fungi, bacteria, and slime molds; life histories and preventive methods.

Lectures, laboratory, and reference. Not open to those who have completed 1. Offered in alternate years. (Not given in 1919-20.) **FREEMAN, STAKMAN.**

12. **SEED PROBLEMS.** Special seed problems are assigned. Advanced work in seed-testing methods. **DAHLBERG.**

14. **PLANT DISEASE CONTROL.** A detailed study of methods of controlling diseases of plants of parasitic origin. Spray materials and spray machinery. Practical applications. Not open to those who have completed 6. (Given in alternate years. Not offered in 1919-1920.) **BISBY, NEWHALL.**

CHEMISTRY

SCHOOL OF CHEMISTRY

Professors LAUDER W. JONES, Dean; GEORGE B. FRANKFORTER, CHARLES F. SIDENER; Associate Professors WILLIAM H. HUNTER, FRANK H. MACDOUGALL, M. CANNON SNEED; Assistant Professors LILLIAN COHEN, ISAAC W. GEIGER, FRANK C. WHITMORE; Instructors LAWRENCE M. HENDERSON, GUY H. WOOLLETT; Assistants CLIFF S. HAMILTON, FRANK J. HECK, CHARLES D. HURD, LUCILE KRANZ, WALTER M. LAUER, BARBARA LEE LUND, J. LEWIS MAYNARD, VERGIL E. MEHARG, MINERVA MORSE, ALFRED W. SCOTT, HATTIE SPAHR, CHRIS J. WERNLUND, J. RUSSELL WINSLOW, WILL F. WOLF.

REQUIREMENTS OF THE DEPARTMENT

In Chemistry the purpose of the honors course is served by the Five-Year Course in Arts and Chemistry.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
<i>Division of General and Inorganic Chemistry</i>				
1-2-3	12†	General Inorganic Chem....	Pre-medics entering without Chem.	None
4-5	8†	General Inorganic Chem....	Fr. Pre-medics..	H. s. chem.
6-7-8	15†	General Inorganic Chem....	Fr.	None
9-10	10†	General Inorganic Chem....	Fr.	H. s. chem.
11	4	Qual. Chem. Analysis.....	Fr., soph.,	
			Pre-medics	1-2-3, or 4-5
12-13	10†	Qual. Chem. Analysis.....	Soph.	6-7-8, or 9-10
*19	3	Teachers' Course.....	Jr., sr.	Gen. Chem. and Qual. Anal.
*101	2	History of Chemistry.....	Sr., grad.	35-36
*102	2	Adv. Inorganic Prep.....	Jr., sr., grad.	20-21
*103	3	Adv. Inorganic Chemistry...	Jr., sr., grad.	35-36, 20-21
*104	2	Adv. Inorganic Chemistry...	Jr., sr., grad.	35-36, 20-21
<i>Division of Analytical Chemistry</i>				
20	3 or 5	Quantitative Analysis.....	Soph., jr., sr.	11 or 12
21	5	Quantitative Analysis(cont.).	Soph., jr., sr.	20

† Two quarters must be completed before credit is given for any one quarter.

No.	Credits	Title	Offered to	Prereq. courses
*123	3	Iron and Steel Analysis.....	Jr., sr., grad.	21
*124	3	Mineral and Ore Analysis....	Jr., sr., grad.	21
*125	2 or 3	Special Problems in Quant. Anal.	Sr., grad...	21
*126	1 or 2	Sanitary Water Analysis....	Sr. grad.	21
<i>Division of Organic Chemistry</i>				
31-32	8†	Elementary Organic Chem...	Soph., Pre-med-ics	1-2-3, 6-7-8
*35-36	10†	Organic Chemistry.....	Jr., sr.	1-2-3, 6-7-8
*131	3	Adv. Organic Chemistry.....	Jr., sr., grad.	31-32
*132	3	Adv. Organic Chemistry.....	Jr., sr., grad.	131
*137-138	Arr.	Adv. Organic Chem. Lab. ¹	Jr., sr., grad.	31-32
*139	Arr.	Adv. Organic Chem. Lab. ¹	Jr., sr., grad.	137-138
<i>Division of Physical Chemistry</i>				
*141-142-	9, 12,			
143	or 15†	Physical Chemistry.....	Jr., sr., grad.	2 yrs. Col. Ch. 1 yr. Col. Phys.
*146	2	Radiochemistry Laboratory..	Sr., grad.	145
*147-148-	149	Adv. Physical Chem.....	Sr., grad.	141-142-143 and Cal- culus
*151-152-	153	Arr. Adv. Physical Chem. Lab....	Sr., grad.	To accompany 147- 148-149

¹ Open to those students who are taking or have taken the lecture course in Advanced Organic Chemistry.

† Two quarters must be completed before credit is given for any one quarter.

DIVISION OF GENERAL AND INORGANIC CHEMISTRY

1-2-3. GENERAL INORGANIC CHEMISTRY. For those who have had no high-school chemistry. Study of the general laws of chemistry and of the non-metals and their compounds. 2—Continuation of Course 1. 3—Study of the metals and their compounds. Continuation of Course 2. For pre-medics only. WHITMORE and Assistants.

4-5. GENERAL INORGANIC CHEMISTRY. For those who have had one year high-school chemistry. Study of general laws of Chemistry and of non-metals and their compounds. More intensive than Courses 1 and 2. 5—Study of metals and their compounds. For pre-medics only. Continuation of Course 4. and Assistants.

11. QUALITATIVE CHEMICAL ANALYSIS. Laboratory work in systematic qualitative analysis with lectures on solution, ionization, chemical and physical equilibrium, oxidation and reduction, and other subjects pertinent to qualitative analysis. For students who satisfy the requirements of general chemistry. and Assistants.

6-7-8. GENERAL INORGANIC CHEMISTRY. For those who have had no high-school chemistry. Includes study of general laws of chemistry and non-metals and their compounds. 7—Continuation of Course 6. 8—Metals and their compounds and ionic equilibrium, considered quantitatively. COHEN and Assistants.

9-10. GENERAL INORGANIC CHEMISTRY. For those who have had one year of high-school chemistry. General laws of chemistry; non-metals and their compounds. More intensive than Courses 6 and 7. 10—Metals and their compounds and ionic equilibrium, considered quantitatively. SNEED and Assistants.

12-13. QUALITATIVE CHEMICAL ANALYSIS. Laboratory work in systematic qualitative analysis with lectures on solution, ionization, chemical and physical equilibrium, oxidation and reduction, and other subjects pertinent to qualitative analysis. For students who satisfy the requirements of general chemistry. 13—Continuation of Course 12. WHITMORE and Assistants.

*19. TEACHERS' COURSE. A consideration of the fundamental principles of chemistry with particular reference to the teaching of chemistry in the high school. Discussion of such topics as training of the teacher, laboratory equipment, etc. GEIGER.

*101. HISTORY OF CHEMISTRY. The historical development of the theories of chemistry from the period of the ancients to the present time is covered by this course, particular emphasis being given to modern theories and laws. COHEN.

*102. ADVANCED INORGANIC PREPARATIONS. The course will aim to develop laboratory technique and ability to apply chemical theory in a practical way. The choice of preparation may be varied to some extent to suit individual interests. WHITMORE.

*103. ADVANCED INORGANIC CHEMISTRY. A discussion of special subjects of inorganic chemistry such as valency, oxidation and reduction, colloids, complex ions, etc. SNEED.

*104. ADVANCED INORGANIC CHEMISTRY. A discussion of the chemistry of certain elements and compounds such as cobalt, silver, mercury, tungsten, and their derivatives.

DIVISION OF ANALYTICAL CHEMISTRY

20. QUANTITATIVE ANALYSIS. An introductory course covering the general principles and methods of quantitative analysis, both gravimetric and volumetric. Typical problems will be assigned and attention given to proper laboratory practice. SIDENER, GEIGER, and Assistants.

21. QUANTITATIVE ANALYSIS. Supplementary to Course 20. Further discussion of the principles and methods together with laboratory work on additional typical problems in gravimetric and volumetric analysis. SIDENER, GEIGER, and Assistants.

*123. IRON AND STEEL ANALYSIS. Rapid technical methods for determination of the common constituents of iron ore, iron and steel will be discussed and compared, and typical problems assigned for laboratory

practice. One lecture and eight laboratory hours per week. SIDENER, GEIGER.

*124. MINERAL AND ORE ANALYSIS. A course in the rapid technical methods for the determination of important constituents in minerals, ores, and slags. One lecture and eight laboratory hours per week. SIDENER, GEIGER.

*125. SPECIAL PROBLEMS IN QUANTITATIVE ANALYSIS. Selection may be made to meet the particular needs of the student from the following: Silicate analysis, non-ferrous alloy analysis, industrial water analysis, problems in electro-analysis, etc. Six or nine laboratory hours per week. SIDENER, GEIGER.

*126. SANITARY WATER ANALYSIS. Lectures and laboratory practice in the chemical examination of potable waters. Three hours laboratory work per week. SIDENER, GEIGER.

DIVISION OF ORGANIC CHEMISTRY

31-32. ELEMENTARY ORGANIC CHEMISTRY. This course will include a discussion of important compounds of the aliphatic and of the aromatic series, and the preparation of typical substances. It is intended primarily for students in professional schools. HUNTER, WOOLLETT, and Assistants.

*35-36. ORGANIC CHEMISTRY. An introduction to the chemistry of carbon compounds. The laboratory work will include the preparation of characteristic substances. HUNTER, WOOLLETT, and Assistants.

*131. ADVANCED ORGANIC CHEMISTRY. Aliphatic and aromatic series. HUNTER or JONES.

*132. ADVANCED ORGANIC CHEMISTRY. Heterocyclic compounds. JONES or HUNTER.

*137-138. ADVANCED ORGANIC CHEMISTRY LABORATORY WORK. Includes difficult preparations and problems. Intended to supplement the student's knowledge of the methods of organic chemistry, and is recommended to all students who expect to pursue research in organic chemistry. JONES or HUNTER.

*139. ADVANCED ORGANIC CHEMISTRY LABORATORY WORK. This is a course of selected laboratory problems of an advanced nature including some original work in the nature of an introduction to research.

DIVISION OF PHYSICAL CHEMISTRY

*141-142-143. PHYSICAL CHEMISTRY. A general survey of the subject. Three lectures and one recitation. Laboratory work three or six hours per week. Three, four or five credits, depending on amount of laboratory work. MACDOUGALL and Assistants.

*145. **RADIOCHEMISTRY.** The occurrence, methods of isolation, and physico-chemical properties of the radioactive substances, together with a brief consideration of the chemical, geological and biological bearing of the subject. (Not offered in 1919-20.) HENDERSON.

*146. **LABORATORY COURSE IN RADIOCHEMISTRY.** To accompany or follow 145. HENDERSON.

*147-148-149. **ADVANCED PHYSICAL CHEMISTRY.** Selected topics: Thermodynamics, applications to chemical equilibrium, theoretical electrochemistry, kinetic theory, photochemistry, etc. MACDOUGALL.

*151-152-153. **ADVANCED PHYSICAL CHEMISTRY LABORATORY.** To accompany or follow 147-148-149. MACDOUGALL.

COMPARATIVE PHILOLOGY

Professor FREDERICK KLAEBER.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
*101-2	4†	Science of Language.....	Jr., sr., grad.	See statement
*103	2	Universal Language.....	Jr., sr., grad.	Same as for 101
*105	2	The Life of Words.....	Jr., sr., grad.	Same as for 101
*141-2-3	6†	Historical Grammar of the English Language.....	Jr., sr., grad.	See statement
*163	3	Phonetics.....	Jr., sr., grad.	See statement

† Both quarters must be completed before credit is given for either.

*101-2. **GENERAL INTRODUCTION TO THE SCIENCE OF LANGUAGE.** Prerequisites, one of the following groups: (1) five years foreign language, four may be in high school and one in college; (2) two years foreign language in college; (3) four credits Old English. KLAEBER.

*103. **UNIVERSAL LANGUAGE.** Comparison of families of languages grammatically and lexically. Movement for creation of an international language. Consideration of Volapük, Esperanto, Ido, etc. KLAEBER.

*105. **THE LIFE OF WORDS.** Etymology and semasiology. Growth of vocabulary; change of words in form and meaning. KLAEBER.

*109-10-11. **HISTORY OF THE GERMAN LANGUAGE.** Lectures, discussions, assigned readings. Prerequisites, German 53-54. This course is identical with German 109-10-11. (Not given in 1919-20.) KLAEBER.

*141-42-43. **HISTORICAL GRAMMAR OF THE ENGLISH LANGUAGE.** I. Sounds and spelling. II. Accidence and syntax. KLAEBER.

*163. **PHONETICS.** A study of speech sounds and the nature of their production with special reference to English, French, and German. Open to students of the modern languages. Prerequisite, two credits in starred courses. Identical with German 163. KROESCH.

DRAWING AND DESCRIPTIVE GEOMETRY

Professor WILLIAM H. KIRCHNER, Chairman; Assistant Professor ROBERT W. FRENCH; Instructor LEON ARCHIBALD.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
31	2	Drafting and Tracing.....	Soph., jr., sr.	None
33-34	4	Technical Drawing.....	All	None

31. DRAWING AND TRACING. Intensive course on instruments, elementary projection, lettering, drafting-room methods and conventions, including tracing and blue-printing. Primarily designed to meet the demand of the industries. KIRCHNER, FRENCH, and Assistants.

33-34. TECHNICAL DRAWING. A general course in the theory and practice of drawing. Sketching, lettering, tracing, blue-printing, and mechanical drawing. The use in instruments, projections (constructive geometry), and working drawings. KIRCHNER.

ECONOMICS DEPARTMENT

Professors GEORGE W. DOWRIE, Chairman; JOHN H. GRAY, ROY G. BLAKELY, E. DANA DURAND¹; Associate Professors JOHN D. BLACK, WILLIAM W. CUMBERLAND, FREDERICK B. GARVER, ALVIN H. HANSEN, BRUCE D. MUDGETT, CLARE L. ROTZEL; Assistant Professors Z. CLARK DICKINSON, CLARENCE L. HOLMES, J. HUGH JACKSON¹, ALBERT C. JAMES, HOWARD S. NOBLE, THOMAS H. SANDERS, J. WARREN STEHMAN; Professorial Lecturers J. FRANKLIN EBERSOLE, JOHN H. SHERMAN; Instructors JOSEPH E. CUMMINGS, VICTOR H. PELZ, CLARA SYKES, GEORGE A. MORLOCK.

REQUIREMENTS OF THE DEPARTMENT

For B.A. with Honors, the general requirements: thirty-six credits in Economics, of which twenty-four shall be selected from advanced courses numbering 100 and above.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	10	Intro. to Economic History..	Fresh.	None
3-4	10	Principles of Economics.....	Soph., jr., sr. ²	None
5 ¹	5	General Economics.....	Fresh, soph., jr.	None.
6 ¹	3	Agricultural Economics.....	Soph., jr.	5
11-12	6	Statistics.....	Jr., sr.	3-4 or 5, 6
14	5	Statistics.....	Soph.	3-4 or 5, 6
15-16-17	9	Economic Problems.....	See Engineering bulletin	
18 ¹	5	Problems in Agri. Economics .	Soph., jr., sr.	3-4 or 5, 6
19 ¹	5	Principles of Agricultural Marketing.....	Jr., sr.	3-4 or 5, 6

¹ Given at the University Farm.

² Open also to freshmen their third quarter.

¹ Absent on leave 1919-20.

No.	Credits	Title	Offered to	Prereq. courses
20 ¹	5	Problems in Rural Economics.	Soph., jr., sr.	3-4 or 5, 6
23	5	Principles of Organization and Management.....	Soph., jr., sr.	3-4 or 5, 6
25-6	8 ²	Principles of Accounting.....	Soph., jr., sr.	None
41	3	Financial History of U. S....	Jr., sr.	3-4 or 5, 6
*51-2-3	9	Business Law.....	Jr., sr.	10 credits in Econ. or Pol. Sci. or 5 in each
*54	3	Corporation Finance.....	Jr., sr.	3-4 or 5, 6
*55	3	Advanced Corporation Finance.....	Jr., sr.	*54
*59	3	Life Insurance.....	Jr., sr.	3-4
*60	3	Fire Insurance.....	Jr., sr.	3-4
*61	3	General Insurance.....	Jr., sr.	3-4
*76	3	Commercial Policies.....	Jr., sr.	3-4
*77	3	Foreign Trade.....	Jr., sr.	*76
*85	5	Principles of Marketing.....	Jr., sr.	3-4 or 5, 6
*86	3	Advertising and Selling.....	Sr.	3-4 or 5, 6
*86	3	Advertising and Selling.....	Jr., sr.	19 or *85
*88	3	Retail Marketing.....	Jr., sr.	*85
*95-6	6	Office Management.....	Jr., sr.	3-4 or 5, 6, and 25-6
*97	2	Seminar in Secretarial Administration.....	Sr.	*95-6
*100-1-2	9	Economic History of Europe 1300-1750.....	Jr., sr., grad.	15 credits Econ. or Hist. or Econ. and Hist. combined.
*103-4	6	Value and Distribution	Jr., sr., grad.	3-4 or 5, 6
*105	3	History of Economic Ideas...	Jr., sr., grad.	*103-4
*107 ¹	5	Land Tenure	Jr., sr.	3-4 or 5, 6
*108 ¹	5	Agricultural Statistics	Jr., sr.	11
*109 ¹	5	Economics of Consumption ..	Jr., sr.	3-4 or 5, 6
*110 ²	5	Farm Marketing Problems...	Jr., sr.	19
*116-7-8 ¹	9	Advanced Agricultural Economics.....	Sr.	15 credits
*119-20-21 ¹	9	Seminar in Agri. Economics ..	Sr.	20 credits
*126-7-8 ¹	9	Special Research Problems in Agri. Economics.....	Sr., grad.	15 credits
*131	3	Cost Accounting	Jr., sr., grad.	25-6
*132-3	6	Industrial Accounting.	Jr., sr., grad.	*131
*134-5-6	9	Auditing	Jr., sr., grad.	25-6
*137-8-9	9	Accounting Practice and Procedure.....	Jr., sr., grad.	25-6
*143-4	10	Money and Banking.....	Jr., sr., grad.	3-4 or 5, 6
*145	3	International Exchange.....	Jr., sr., grad.	*143-4
*146	3	Investments.....	Jr., sr., grad.	3-4 or 5, 6
*147	3	Bank Administration.....	Jr., sr., grad.	*143-4
*149	3	Business Cycles.....	Jr., sr., grad.	*143-4, 146
*150 ¹	3	Farm Finance.....	Jr., sr., grad.	3-4 or 5, 6
*153	3	Modern Business Corporation	Jr., sr., grad.	*54
*154	3	Public Utilities.....	Jr., sr., grad.	*54
*160	3	Economic Motives.....	Jr., sr., grad.	3-4 Psyc. 1-2
*161	3	Labor Problems.....	Jr., sr., grad.	3-4 or 5, 6
*162	3	Trade Unionism.....	Jr., sr., grad.	*161

¹ Given at the University Farm.

² Students in the College of Agriculture, Forestry, and Home Economics may receive credit at the close of the first quarter.

No.	Credits	Title	Offered to	Prereq. courses
*164	...	Police Power.....	See Pol. Sci.	
*165	...	Law of Labor.....	See Pol. Sci.	
*169	3	Labor and Reform Movements.....	Jr., sr., grad.	*161
*173	3	Railway Problems.....	Jr., sr., grad.	*54
*191-2	6	Public Finance.....	Jr., sr., grad.	3-4 or 5, 6
*193	3	State and Local Taxation....	Jr., sr., grad.	*191-2
*195-6-7	6	Seminar in Business Finance.	Sr., grad.	18 cr. incl., *143-4

1-2. INTRODUCTION TO ECONOMIC HISTORY WITH SPECIAL EMPHASIS ON THE UNITED STATES. Lectures and section work. A general survey of the development of agriculture, manufacture, transportation, storage, and the exchange of goods; economic crises; land, capital, management, and labor; the interplay of economic and political forces. GRAS, DICKINSON, and others.

3-4. PRINCIPLES OF ECONOMICS. Principles that underlie the present industrial order. Application of principles to economic problems such as labor, insurance, finance, transportation, industrial combination, government control. HANSEN and others.

5. GENERAL ECONOMICS. Principles of economics combined with the necessary descriptive facts, as relating to economic life in general and to agriculture and forestry, in particular. HOLMES.

6. AGRICULTURAL ECONOMICS. Principles of agricultural economics with especial emphasis upon production. HOLMES.

11-12. STATISTICS. Principles of collection, tabulation, and interpretation of statistical material, illustrated by present-day statistical data. Lectures, assigned readings, and special investigations by individual members of the class. MUDGETT.

14. STATISTICS. See statement for 11-12.

15-6-7. MODERN ECONOMIC PROBLEMS FOR ENGINEERS. Effect of industrial development: international commerce; corporation organization and finance; banking and credit; public ownership and finance; trusts, monopolies; transportation problems, insurance, conservation, labor problems. Lectures, textbook, talks by men actively engaged in fields studied. BLAKELY.

18. PROBLEMS IN AGRICULTURAL ECONOMICS. The economic facts and principles underlying the practical problems confronting the farmer as producer, consumer, and citizen, such as what to produce, intensity of cultivation, farm labor, tenancy, land settlement, farm credit, marketing, and taxation. BLACK.

19. PRINCIPLES OF AGRICULTURAL MARKETING. The organization and methods of marketing; the functions of middlemen; the costs of marketing various products; coöperative marketing.

20. PROBLEMS IN RURAL ECONOMICS. A survey of the economic aspects of the important problems of rural life, such as rural population, rural migration, tenancy, agricultural labor, marketing of farm products, coöperation, rural credit, land settlement. CUMBERLAND.

23. PRINCIPLES OF ORGANIZATION AND MANAGEMENT. Organization: principles applying to business in general and to particular concerns; evolution, functional divisions; specialization—functional and other forms; standardization. Management: personnel, information, coöordination of functions, planning, external versus internal factors. PELZ.

25-6. PRINCIPLES OF ACCOUNTING. The purpose and principles of account classification; capital and revenue; accruals; valuation; depreciation; preparation and interpretation of balance sheets, income accounts and other statements; corporation accounts. A laboratory course with supplementary lectures. SANDERS and others.

41. FINANCIAL HISTORY OF THE UNITED STATES. American financial legislation from colonial times with special emphasis upon the distinction between maintaining a standard of value and the provision of a revenue for the needs of government. BLKEY.

*51-2-3. BUSINESS LAW. See Political Science 51-2-3.

*54. CORPORATION FINANCE. The organizing, financing, and managing of corporations. A study of corporate securities for purposes of promotion and reorganization and of facilities for marketing them. STEHMAN.

*55. ADVANCED CORPORATION FINANCE. A study of the financial history of certain typical corporations with special reference to their promotion and reorganization. STEHMAN.

*59. LIFE INSURANCE. Life insurance companies; types of policies and their uses, premiums, reserve, surrender values, dividends, and rights and obligations of the policy holder. Analysis and discussion of War Risk Insurance. JAMES.

*60. FIRE INSURANCE. Basic theory and critical examination of fire insurance policy. Study of organization of stock and mutual companies, the agency system; reserves, rate making and fire prevention. Special attention to laws of Minnesota and neighboring states. JAMES.

*61. GENERAL INSURANCE. A study of basic principles and critical analysis of accident and health insurance, marine, plate glass window, burglary, credit, boiler, and factory mutuals. JAMES.

*76. COMMERCIAL POLICIES. Theory of international commerce; free trade, reciprocity and protection, with special emphasis on the tariff history and policy of the United States; commercial treaties and foreign politics. Lectures, assigned readings, and reports. BLKEY.

- *77. FOREIGN TRADE. Nature and methods of foreign trade. Present foreign trade situation with special reference to the United States. BLAKELY.
- *81-2-3. ECONOMIC HISTORY OF EUROPE AND THE UNITED STATES, 1750 TO THE PRESENT. Graduates taking the course will be required to do some special work. (Not given in 1919-20.) GRAS.
- *85. PRINCIPLES OF MARKETING. Domestic merchandising methods of manufacturers. Problems of wholesalers and commission men; distributing system and market organization; price policies. SHERMAN.
- *86. ADVERTISING AND SELLING. Functions and principles of advertising; advertising media; planning and executing an advertising campaign. Copy. Sales management and personal salesmanship. PELZ, SHERMAN.
- *88. RETAIL MARKETING. Problems and methods of the so-called regular retailer, department stores, and chain stores. Development of retail trade centers. Coöperation between the retailer and the local board of trade. The retailer and the consumer. SHERMAN.
- *95-6. OFFICE MANAGEMENT. The function of the office in business, showing principles of efficiency applied to daily routine; the layout, equipment and flow of work in an office; standardization of stenographic work; filing; proofreading; practice with modern office appliances. SYKES.
- *97. SEMINAR IN SECRETARIAL ADMINISTRATION. SYKES.
- *100-1-2. ECONOMIC HISTORY OF EUROPE, 1300-1750. The chief interests are the manor; the town; the metropolis; national economic regulation; developments in agriculture, commerce, manufacture, and economic thought, leading up to the Industrial Revolution. GRAS.
- *103-4. VALUE AND DISTRIBUTION. An advanced course in economic theory devoted chiefly to a study of recent theories of distribution. Assigned readings, reports and discussions. GARVER.
- *105. HISTORY OF ECONOMIC IDEAS. History of economic thought; scope and logical methods, relation to other social sciences; methods of investigation and instruction. Assigned readings, reports, and class discussions. GARVER.
- *107. LAND TENURE. A study of several problems arising out of the land basis of civilization, such as property in land, land utilization, land classification, land settlement, status of the agricultural classes, farm labor, farm ownership and tenancy. BLACK.
- *108. AGRICULTURAL STATISTICS. Study and practice of the special methods of statistical investigation, analysis and presentation which have

been developed for agriculture, together with descriptive statistics of agriculture. **BLACK.**

*109. **ECONOMICS OF CONSUMPTION.** Nature of human wants; standards of living; cost of living; income, administration of income; nature of demand; demand and price; relation of consumption and the population problem.

*110. **FARM MARKETING PROBLEMS.** Studies in the methods of private and coöperative marketing of selected farm products.

*112. **ADVANCED STATISTICS.** Dealing with more advanced problems connected with assembling, tabulating, interpreting, and using statistical information. As far as practicable the data used will be drawn from business. (Not given in 1919-20.) **MUDGETT.**

*116-7-8. **ADVANCED PROBLEMS IN AGRICULTURAL ECONOMICS.** Economic theory of production, consumption, exchange, and value and distribution applied to agriculture. **BLACK, CUMBERLAND, HOLMES.**

*119-20-21. **SEMINAR IN AGRICULTURAL ECONOMICS.** Subjects for group study selected from the following; Competition of types of farming; markets and transportation of farm products; farmers' coöperation; prices of farm products; rural credit; land valuation; land settlement; land taxation. **BLACK, CUMBERLAND, HOLMES.**

*126-7-8. **SPECIAL RESEARCH PROBLEMS IN AGRICULTURAL ECONOMICS.** Intensive individual research work on problems not being studied in the seminar during the quarter. **BLACK, CUMBERLAND, HOLMES.**

*131. **COST ACCOUNTING.** Principles determining costs; elements of cost; use of data in establishing standards; methods of arriving at costs, and of distribution of overhead; operation reports and statistics; elimination of waste, etc. Lectures and assigned problems. **NOBLE.**

*132-3. **INDUSTRIAL ACCOUNTING.** A continuation of cost accounting; a critical study of various methods applied to particular types of industry; practical experience through constructive work in advance; preparation of accounting systems with provision for adequate operating reports and statistics. **NORLE.**

*134-5-6. **AUDITING.** Preparation for, and conduct of, an audit; the auditor's report and certification, and legal responsibilities. Textbook, assigned readings, class discussions, and lectures. **ROTZEL.**

*137-8-9. **ACCOUNTING PRACTICE AND PROCEDURE.** Intensified study of numerous subjects discussed in Principles' course. First quarter, treats partnerships, municipal accounts, bankruptcy, etc.; second quarter, corporation accounts in all phases; third quarter, retail, wholesale, department store, branch, commission, and consignment accounts. **SANDERS.**

*143-4. MONEY AND BANKING. Relation to industrial system. Monetary principles with special reference to United States. American banking and bank organization, principles of commercial banking, non-commercial banking, relation of government to banking, comparative study of leading foreign systems. DOWRIE, EBERSOLE, STEHMAN.

*145. INTERNATIONAL EXCHANGE. Theory of international exchange, pars of exchange with gold, silver, and paper standard countries; the rates of exchange, financing imports and exports; bankers' bills; futures; arbitrage; specie movements; the present foreign exchange situation. DOWRIE.

*146. INVESTMENTS. The social process of saving and investment; government, municipal, corporation, and real estate loans; stock exchange operations and money market influences as they affect the prices and net yield of prime securities. EBERSOLE.

*147. BANK ADMINISTRATION. The modern commercial bank from the manager's point of view. Legal problems, department functions, profit-making methods, credits. Adjustment of bank policy to prospective business conditions. Lectures, and laboratory work in local banks. EBERSOLE.

*149. BUSINESS CYCLES. American business conditions since 1890 with regard to the great cycles of alternate prosperity and depression, and financial panics. Critical examination of all the available business barometers designed to forecast similar conditions. EBERSOLE.

*150. FARM FINANCE. The financial needs of typical farmers. Present facilities for supplying them—stitutions, their organization and operation, interest rates, defects and proposed remedies. The financing of the various farmers' organizations. The farmer as an investor. DOWRIE.

*153. THE MODERN BUSINESS CORPORATION. Social and legal aspects of the corporation. The development of the trust and the regulatory policy of the government. GRAY.

*154. PUBLIC UTILITIES. Economic and legal bases of classification. Relative advantages of public ownership and regulation. Central and municipal regulation compared. The basis of rates; relative rates; rates and service. Different theories of valuation. GRAY.

*155. BUSINESS AND GOVERNMENT. Business expansion, diversification, and conflicting interests. *Laissez-faire* versus regulation. Enforcement of minimum standards. Administration of business legislation. Coöperation between government and business. Public coöordination of business forces. Reaction of war emergency measures on permanent policy. (Not offered 1919-20.)

*156-7-8. SEMINAR IN BUSINESS POLICY. Individual investigations and reports upon fundamental questions of business policy. The investigations will have to do with the public relations of particular concerns and with their relations to customers, creditors, competitors, and employees. (Not offered 1919-20.)

*160. ECONOMIC MOTIVES. Incentives to work, to accumulation, to consumption. Necessary adjustments between industrial processes and human nature. DICKINSON.

*161. LABOR PROBLEMS. Modern labor problems; woman and child labor, industrial hygiene, welfare work, profit-sharing, coöperation, labor unions, strikes, boycotts, conciliation, and arbitration; economic causes and effects of immigration. HANSEN.

*162. TRADE UNIONISM. Development and activities of American trade unions. Economic and legal aspects of collective bargaining, closed shops, strikes, and boycotts. Employers' associations. Conciliation and arbitration. Social significance and probable future of trade unionism. HANSEN.

*164. POLICE POWER. See Political Science *157.

*165. LAW OF LABOR. See Political Science *175.

*167. INDUSTRIAL RELATIONS. Relation of employer and worker in industrial enterprises; theory and mechanism of collective bargaining; joint agreements; shop committees; other plans for workers' participation in management; development in industrial government. (Not offered 1919-20.)

*169. LABOR AND REFORM MOVEMENTS. A study of various proposals for economic reform. The growth and tactics of Socialist party in Europe and the United States, communism and the communistic experiments, the Single Tax, profit sharing in industry, social insurance. HANSEN.

*173. ECONOMICS OF TRANSPORTATION. The theory and practice of rate making. Government regulation, the conflict between states and federal authorities and suggested improvements in control of transportation agencies. GRAY.

*191-2. PUBLIC FINANCE. Public expenditures; public debt; budgetary legislation; tax systems. BLAKELY.

*193. STATE AND LOCAL TAXATION. Problems of state and local taxation. Historic survey of various taxes and examination of present procedure in taxing different kinds of property; tax reforms. Particular attention given to conditions in Minnesota. BLAKELY.

*195-6-7. SEMINAR IN BUSINESS FINANCE. The various unsettled monetary and banking problems of the United States will furnish topics for individual investigation. DOWRIE, EBERSOLE, STEHMAN.

*210-1-2. **SEMINAR IN ECONOMIC HISTORY.** Some limited field or single topic in American or English economic history. Intended primarily as a training course in the methods and problems of economic history. GRAS.

*259-60. **SEMINAR IN CORPORATIONS AND PUBLIC UTILITIES.** Independent investigation by each student, under the guidance of the instructor, of some specific problem pertaining to corporations and public utilities. GRAY.

*261-2-3. **SEMINAR FOR GRADUATES EXCLUSIVELY.** Research to be arranged with individual instructors in the various fields of economics. Prerequisites; twelve credits in starred courses and the approval of the Department. Members of the Department.

EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND SUPERVISION

Professors LOTUS D. COFFMAN, Dean, LEONARD V. KOOS; ALBERT W. RANKIN, FLETCHER H. SWIFT; Associate Professor WILFORD S. MILLER; Assistant Professor ROSS L. FINNEY.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
3	3	Social Aspects of Education..	Jr. sr.	10 cr. in Psychol.
20	3	High-School Curriculum	Jr. sr.	10 cr. in Psychol.
5s	3	American School.....	Jr. sr.	10 cr. in Psychol.
113	3	High-School Problems.....	Sr. grad.	
119-120	6	School Curricula.....	Sr. grad.	1 or 101-102 and 3
121	3	School Organ. and Admin.....	Sr. grad.	1 or 101-102 and 3
124-125-126	9	Educational Admin.....	Sr. grad.	121
141	3	School Sanitation.....	Sr. grad.	1 or 101-102 and 3
142	3	Industrial Education.....	Sr. grad.	1 or 101-102 and 3
160-161-162	6	Theory of Supervision.....	Sr. grad.	1 or 101-102 and 3
164	3	Problems of High-School Ad- ministration.....	Sr., grad.	1 or 101-102 and 3
167	3	Junior High School.....	Sr., grad.	1 or 101-102 and 3

NOTE.—Certain courses in Secondary Education will be added later.

3. **SOCIAL ASPECTS OF EDUCATION.** The school as a community factor; the present peculiar relation of the school to social problems; the function of the school in these relations.
5. **THE AMERICAN SCHOOL.** A brief survey of the factors determining the problem of public education in America, followed by a brief account of the development and organization of typical state school systems.
20. **HIGH-SCHOOL CURRICULUM.** Types of curricula, constants and variables, sequences, time limits, distribution of subject-matter by years and by units.

113. **SECONDARY EDUCATION MOVEMENTS.** Some of the movements considered are: changed concepts of method, reorganization as affecting the grades below the high school and work beyond the four years of high school, supervised study, socialization of curricula, public control.

119-120. **SCHOOL CURRICULA.** Study of the ideas implicit in a democratic society and an attempt to apply those ideas in the selection of material of school curricula. Involves some consideration of the constructive aims and methods of education.

121. **SCHOOL ORGANIZATION AND ADMINISTRATION.** An introductory course in school administration for students of teaching experience and for those looking forward to work as principals and superintendents.

124-125-126. **EDUCATIONAL ADMINISTRATION.** An interpretation of present tendencies in the administration of state and city school systems.

141. **SCHOOL SANITATION.** A course in school hygiene in its broader aspects. Designed for all teachers and supervisors who are responsible for the health of school children. Treats of medical supervision and other problems arising from school environment.

142. **INDUSTRIAL EDUCATION.** Existing types of industrial and vocational schools and systems of training. Comparison of conditions in America and foreign countries. Organization of course of study.

160-161-162. **THEORY OF SUPERVISION.** The problems involved in the training of teachers in service; studies of qualities of merit in teachers; factors in service; factors in selecting teachers; the distribution of subject-matter by grades; time allotment of studies.

164. **PROBLEMS OF HIGH-SCHOOL ADMINISTRATION.** A study of the types of secondary schools, units of administration, costs, forms of organization, graduation requirements, and extra-curricular activities.

167. **JUNIOR HIGH SCHOOL.** The history of the junior high school movement, its purposes and results, changes in curriculum and in methods of instruction, special groups appealed to, modifications in plant and equipment.

DEPARTMENT OF HISTORY AND PHILOSOPHY OF EDUCATION
 Professor FLETCHER H. SWIFT; Instructor JEAN H. ALEXANDER.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	5	Brief Course in History of Education.....	Jr., sr.	10 credits in Psychol. of which 5 may be in Educ. Psychology

No.	Credits	Title	Offered to	Prereq. courses
101	3	Foundations of Modern Education.....	Jr., sr., grad.	10 credits in Psychol. of which 5 may be in Educ. Psychol. and 9 cr. in Dept. of History
102	3	History of Modern Secondary and Higher Education....	Jr., sr., grad.	10 credits in Psychol. of which 5 may be in Educ. Psychol. and 9 cr. in Dept. of Hist.
103	3	History of Modern Elementary Education.....	Jr., sr., grad.	Same as 101 and 102
129-130	6	Educational Classics.....	Jr., sr., grad.	1 or 101-102-103
131-132	6	Comparative School Systems	Jr., sr., grad.	1 or 101-102-103
146	3	History and Principles of Religious Educ.....	Jr., sr., grad.	Same as for 1
148	3	History of Education in the United States.....	Jr., sr., grad.	Same as for 1
211-212-213	6	Seminar in History of Education.....	Grad.	101-102-103 or its equivalent including 6 cr. in Dept. of History.

1. BRIEF COURSE IN HISTORY OF EDUCATION. Current school problems and educational theories in the light of their history. Emphasis upon secondary education and those aspects of education of most immediate concern to high-school teachers.
101. FOUNDATIONS OF MODERN EDUCATION. Historical analysis and interpretation of the more important elements in modern education derived from the Hebrews, Greeks, Romans, Middle Ages, and Renaissance.
102. HISTORY OF MODERN SECONDARY AND HIGHER EDUCATION. A survey of existing types of American and European secondary and higher schools, followed by a historical study of their origin, aims, growth.
103. HISTORY OF MODERN ELEMENTARY EDUCATION. The institutions, theories, and problems of modern elementary education in the light of their history. Emphasis upon the rise of state systems and upon the history of modern educational reform.
- 129-130. EDUCATIONAL CLASSICS. An intensive study of selected writings of educational leaders: first quarter, Plato, Aristotle, Quintilian, Comenius, Locke; second quarter, Rousseau, Pestalozzi, Herbart, Froebel, and Dewey. Students may register for either quarter.
- 131-132. COMPARATIVE SCHOOL SYSTEMS. A survey of the existing school systems of France, England, Germany, Denmark. Emphasis upon present problems. Special reference to educational conditions in the United States. Students may register for either quarter.
146. HISTORY AND PRINCIPLES OF RELIGIOUS EDUCATION. Influence of religion and religious education as social and spiritual forces among

certain selected types. Principles of education as applied to religious instruction and training.

148. **HISTORY OF EDUCATION IN THE UNITED STATES.** Evolution of American ideals, institutions, and practices in elementary and secondary education. Emphasis upon movements of the early nineteenth century. Development of state school systems and the rise of the high school.

211-212-213. **SEMINAR IN HISTORY OF EDUCATION.** Historical investigation of educational problems. Designed to train students in methods of historical investigation; problems to be selected somewhat upon the basis of students' interest.

DEPARTMENT OF THEORY AND PRACTICE OF TEACHING

Associate Professor WILFORD S. MILLER.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
11	3	Technique of Teaching.....	Jr., sr.	10 credits in Psychology of which 5 may be in Educational Psychol.
15	5	Practice Teaching.....	Sr., grad.	See statement
11. TECHNIQUE OF TEACHING.		Types of classroom exercises; preparation of teaching plans; hygiene of instruction; classroom management; the professional ethics of teaching; observation of high-school work.		
15. PRACTICE TEACHING.		Teaching under supervision in the University High School and in the Minneapolis city schools, in the regular secondary school subjects. The course calls for one period daily at the school where the work is assigned.		

ENGLISH, RHETORIC, AND PUBLIC SPEAKING

Chairman for English, ELMER E. STOLL; Chairman for Rhetoric and Public Speaking, JOSEPH M. THOMAS.

Professors CARLETON BROWN,¹ RICHARD BURTON, FREDERICK KLAEBER, ELMER E. STOLL, JOSEPH M. THOMAS; Associate Professors JOSEPH W. BEACH, CECIL A. MOORE, FRANK M. RARIG; Assistant Professors DANIEL FORD, CYRIL A. HERRICK, JAMES T. HILLHOUSE, CHARLES W. NICHOLS, GEORGE N. NORTHKOP, ANNA H. PHELAN, MARTIN B. RUUD, HELEN A. WHITNEY; Professorial Lecturer NATHANIEL E. GRIFFIN; Instructors CECIL C. BEAN, ELIZABETH H. BUCK, ELBRIDGE COLBY, LEWIS B. HESSLER, SIGURD B. HUSTVEDT, ELIZABETH JACKSON, CHARLES F. LINDSLEY, WINSLOW H. LOVELAND, ARIEL MACNAUGHTON, THOMAS R. MATHER, STANLEY RYPINS, EMERSON G. SUTCLIFF, HOWARD T. VIETS; Assistants MARY ELLEN CHASE, GUY L. DIFFENBAUGH, FRANCES KELLEY.

¹ Absent on leave, 1919-20.

REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors in English*, the general requirements; thirty-six credits in English, a reading knowledge of French, German, Italian, Greek, or Latin, and a final year's work in seminar for which a sequence shall have been specially arranged.

For *B.A. with Honors in Rhetoric*, the general requirements; a reading knowledge of either Latin, French, or German; at least twenty-four credits in starred courses in Rhetoric, including Course 201-202-203.

COURSES IN ENGLISH

No.	Credits	Title	Offered to	Prereq. courses
A-B-C	15	Freshman English.....	All	None
1-2-3 ²	9	General Survey of English Literature.....	Soph., jr., sr.	Rhet. 1-2-3. See note
4 ³	4	Old English.....	Jr., sr.	1-2-3. See note
6 ³	4	Chaucer.....	Jr., sr.	1-2-3. See note
8 ³	4	Shakespeare.....	Jr., sr.	1-2-3. See note
27	2	History of the English Lan- guage.....	Jr., sr.	1-2-3, 4.
40 ⁴	3	Bible as Literature.....	Soph., jr., sr.	1-2-3. See note
*51	4	Spenser.....	Jr., sr.	1-2-3
*53	4	Seventeenth Century Lyrists	Jr., sr.	1-2-3
*54	4	American Literature.....	Jr., sr.	1-2-3
*58-59	6†	Nineteenth Century Prose...	Jr., sr.	1-2-3
*64	4	Bacon.....	Jr., sr.	1-2-3
*66	4	English Novel.....	Jr., sr.	1-2-3
*103	4	Beowulf.....	Jr., sr., grad.	1-2-3, 4, and from credits below 10.
*105-106	6†	Eighteenth Century Poetry..	Jr., sr., grad.	1-2-3, and eight credits in courses below 10.
*110	4	Romantic Movement.....	Sr., grad.	1-2-3, and eight credits in courses below 10.
*111-112	6†	Seventeenth Century Prose..	Sr., grad.	1-2-3, and eight credits in courses below 10.
*129	4	Modern Drama.....	Sr., grad.	1-2-3, 8, and four credits in courses below 10.
*136 ⁵	4	Advanced Shakespeare.....	Jr., sr., grad.	1-2-3, 8, and four credits in courses below 10. See note.
*140 ⁶	4	Advanced Chaucer.....	Jr., sr., grad.	1-2-3, 6, and four credits in courses below 10. See note.
*141-142-				
143	6†	Historical Grammar of Eng. Language.....	Sr., grad.	1-2-3, 4, and four credits in courses below 10.
*146-147	6†	Metrical Romances.....	Jr., sr., grad.	1-2-3, 6, and four credits in courses below 10.

[†] This course must be completed in order to secure credit for any quarter.

² This course will not be given after 1919-20.

³ These courses may be taken at the same time with English 1-2-3.

⁴ This course may be taken at the same time with Eng. 1.

⁵ Students receiving grade of B in English 8 may enter this course without the other prerequisites.

⁶ Students receiving grade of B in English 6 may enter this course without the other prerequisites.

COURSES IN RHETORIC

No.	Credits	Title	Offered to	Prereq. courses
A-B-C	15	Freshman English.....	All	None
4-5-6	9	Composition for Technical Students.....	All	None
11-12-13	9	Exposition, Description, Nar- ration.....	Soph., jr., sr.	1-2-3, or 4-5-6
15-16-17	9	Exposition and Argument...	Soph., jr., sr.	1-2-3, or 4-5-6
31	3	Technical Writing.....	Soph., jr., sr.	4-5-6
*103-104	105	Studies in Structure and Style	Jr., sr., grad.	11-12-13, or 15-16-17
*107 ¹	4	Imitative Writing.....	Jr., sr., grad.	See note
*109-110 ¹	6 [†]	Short-Story Writing.....	Jr., sr., grad.	See note
*111-112	113	Essay Writing.....	Jr., sr., grad.	11-12-13, or 15-16-17
*119-120-	121 ²	Seminar in Writing.....	Sr., grad.	See note
*201-202-	203 ³	Graduate Seminar.....	Sr., grad.	See note

[†] Both quarters must be completed before credit is given.

¹ Open to those who have taken 11-12-13 or 15-16-17 and have received a grade of A or B in at least two quarters.

² Open with special permission to seniors and graduates. Prerequisites: Courses 1-2-3, 11-12-13, and nine additional credits in Rhetoric.

³ Open to graduates and to seniors taking the Honors Course. Prerequisites: Courses 11-12-13 or 15-16-17 and nine additional credits in Rhet.

COURSES IN PUBLIC SPEAKING

No.	Credits	Title	Offered to	Prereq. courses
41-42-43	9 or 15	General Course in Public Speaking.....	Soph., jr., sr.	1-2-3, or 4-5-6
*55-56-57	9	Argumentation and Debating	Jr., sr.	41-42-43
*81-82-83	9	Interpretative Reading.....	Jr., sr.	41-42-43
*85-86-87	9	Advanced Public Speaking...	Jr., sr.	41-42-43
*91-92-93 ¹	9	Play Production.....	Sr.	See note
*97 ²	3	Intercollegiate Debate and Oratory.....	Jr., sr.	See note

¹ Open to those who have had Public Speaking 41-42-43 and who have taken or are taking English 8.

² Open to juniors and seniors who are awarded places on the intercollegiate debating squad, or are chosen to represent the University in the Northern Oratorical League contest.

COURSES IN ENGLISH

A-B-C. FRESHMAN ENGLISH. The study of the fundamental principles of composition; training in the art of writing; an historical survey of the classics of English literature. **THOMAS**, Director of the course.

1-2-3. GENERAL SURVEY OF ENGLISH LITERATURE. Lectures, recitations, and assigned readings. Designed to prepare for more minute study of special periods. **STOLL, BEACH, MOORE, NORTHROP, GRIFFIN**.

4. OLD ENGLISH. The language, with reading of representative selections of Old English prose and poetry. The relation to modern English is particularly emphasized. First quarter, **GRIFFIN**; third quarter, **KLAEBER**.

6. CHAUCER. Reading of Tales from the Canterbury collection, with introduction dealing with the grammar and literary forms of fourteenth century English. First quarter, BEACH; second quarter, GRIFFIN.
8. SHAKESPEARE. An introductory study of Shakespeare's development as a poet and dramatist up to *King Lear*, with reading of representative plays. First quarter, STOLL; second quarter, NORTHRUP.
27. HISTORY OF THE ENGLISH LANGUAGE. Outlines of the history of the language. Lectures and assigned readings. KLAEBER.
40. THE BIBLE AS LITERATURE. A literary study of the Old Testament with special attention to forms and the critical study of selected readings. BURTON.
- *51. SPENSER. The forms and literary influences in the Elizabethan period illustrated in the poetry of Edmund Spenser, with brief readings from the minor poems and extended study of *The Faerie Queene*. STOLL.
- *53. SEVENTEENTH CENTURY LYRISTS. The tradition of the Elizabethan lyric traced in the work of the metaphysical and cavalier schools of poetry. NORTHRUP.
- *54. AMERICAN LITERATURE. Lectures on American literature, with extensive readings from the principal poets and prose writers of the United States. MOORE.
- *58-59. NINETEENTH CENTURY PROSE. Studies in the more important prose writers of the nineteenth century, with reference to their styles, personalities, opinions, and relations to their period. Readings by students, and essays on approved topics. BEACH.
- *62. MILTON. A special study of Milton, with some consideration of his contemporaries. (Not given in 1919-20.) MOORE.
- *64. BACON. A study of Bacon as an essayist and as a promoter of learning. NORTHRUP.
- *65. BROWNING AND TENNYSON. A reading of the representative work of the two major poets of the Victorian era, in order to show their quality and contrasted power. (Not given in 1919-20.) BURTON.
- *66. THE ENGLISH NOVEL. Principles and personalities in the evolution of the English novel. Written reports on selected novels. BURTON.
- *101. INTRODUCTION TO MIDDLE ENGLISH. An outline of Middle English grammar, including the interpretation of selected texts. (Not given in 1919-20.) KLAEBER.

- *103. BEOWULF. An introduction to the Old English poem, with reading of considerable portions of the text. KLAEBER.
- *105-106. EIGHTEENTH CENTURY POETRY. The rise of naturalism and romanticism. Eighteenth century poetry from Pope to Burns, with special reference to the rise and growth of naturalism and romanticism. MOORE.
- *107-108. EIGHTEENTH CENTURY PROSE. Lectures on eighteenth century prose and prose writers; readings by the students and essays on approved topics; special study of fiction and the essay. (Not given in 1919-20.) MOORE.
- *109-110. THE ROMANTIC MOVEMENT. The Romantic school of poets from Wordsworth to Keats and the influence of the French revolution. (Only the second half of this course given in 1919-20.) BEACH.
- *111-112. SEVENTEENTH CENTURY PROSE. General survey of the prose of the century to 1660. Course 3-4 in History is a desirable prerequisite. NORTHRUP.
- *123-124. STUDIES IN VICTORIAN NOVELISTS. George Meredith; or in alternate years, Thomas Hardy and Henry James. (Not given in 1919-20.) BEACH.
- *129. MODERN DRAMA. Contemporary drama from 1870 to the present; the new impulse in dramatic literature under the stimulus of latter-day thought. BURTON.
- *133. THE ENGLISH AND SCOTTISH POPULAR BALLADS. The study of a large number of traditional ballads, English and foreign, and the study of ballad style and origins. (Not given in 1919-20.) STOLL.
- *136. ADVANCED SHAKESPEARE. Shakespeare's development traced to the end. A careful analysis of four plays. Problems in the interpretation of Shakespeare's dramatic methods. STOLL.
- *140. ADVANCED CHAUCER. A study of the more important of Chaucer's poems aside from *The Canterbury Tales*, with consideration of critical problems relating to the sources and chronology of Chaucer's work. GRIFFIN.
- *141-142-143. HISTORICAL GRAMMAR OF THE ENGLISH LANGUAGE. This course is identical with Comparative Philology 142-142-143. KLAEBER.
- *145. MEDIEVAL ALLEGORY. A general introduction to the allegory as a type of literature, with special consideration of the more important examples, both religious and secular, in Middle English. (Not given in 1919-20.) BROWN.
- *146-147. THE METRICAL ROMANCES. A study of the more important Middle English romances: designed as an introduction to the great

stories of love and chivalry current in the Middle Ages, particularly those connected with Arthur and the Round Table. GRIFFIN.

COURSES IN RHETORIC

A-B-C. FRESHMAN ENGLISH. The study of the fundamental principles of composition; training in the art of writing; an historical survey of the classics of English Literature. THOMAS, Director of the course.

4-5-6. COMPOSITION FOR TECHNICAL STUDENTS.

11-12-13. EXPOSITION, DESCRIPTION, AND NARRATION. Principles and practice; analysis of specimens; short themes and fortnightly essays, with emphasis on planning and amplification; literary criticism, the first quarter; description, the second; and narration, the third. Number in each section limited to twenty. HILLHOUSE, PHELAN, RUUD, WHITNEY, BUCK.

15-16-17. EXPOSITION AND ARGUMENT. Exposition during the first quarter, followed by argument. The study of a text and the analysis of specimens, accompanied by weekly essays, and shorter themes. Number in each section limited to twenty. FORD, JACKSON.

31. TECHNICAL WRITING. See program for College of Engineering.

***100-101. VERSIFICATION.** The nature of poetry and a detailed analysis of English meters and the various English verse forms. The theory accompanied by criticism of current poetry and practice in writing verse. (Not given in 1919-20.) NICHOLS.

***103-104-105. STUDIES IN STRUCTURE AND STYLE.** Theory of structure and style; rhetorical analysis of standard English prose; themes based on personal observation, current reading, and investigation; preparation of essays with particular classes of readers in view. FORD.

***107. IMITATIVE WRITING.** The principles of structure, diction, and style, which underlie the work of leading English writers; application of these principles in both imitative and original compositions. THOMAS.

***109-110. SHORT-STORY WRITING.** The technique of the short story accompanied by constructive work in story writing. THOMAS.

***111-112-113. ESSAY WRITING.** Practice in writing didactic, biographical, critical, informal essays. Extended composition. Two essays a semester. Individual aid in gathering of material, planning of papers, and criticism of essays. Analysis of a considerable body of modern essays.

***115-116-117. DRAMATIC TECHNIQUE.** Principles of plotting, characterization, climax, dialogue, and scenario-making. Writing of three plays—two original, one dramatized short story. Required readings, laboratory work, criticisms of local productions. (Not given in 1919-20.)

*119-120-121. SEMINAR IN WRITING. Open to advanced students who write with facility and who desire personal direction. Criticism of manuscripts submitted. Lectures on fundamental principles of English composition. THOMAS.

*201-202-203. GRADUATE SEMINAR. (Required of seniors taking the Honors Course.) Lectures, discussions, and reports. Study of critical theory beginning with Plato and Aristotle and emphasizing more important English and French writers. (Not given in 1919-20.) THOMAS.

COURSES IN PUBLIC SPEAKING

Honorable Mention in Public Speaking.—Students who have won honors in debate or oratory, if the department deems them worthy, may receive honorable mention on the commencement program. To be eligible for such distinction a student must (1) have represented his class in the freshman-sophomore debate, or won a place in the freshman-sophomore oratorical contest; (2) have taken part in an intersociety debate; (3) have represented the University in an intercollegiate debate, or won a place in the Pillsbury oratorical contest.

41-42-43. A GENERAL COURSE IN PUBLIC SPEAKING. Fundamentals of effective speaking; breathing, voice-production, enunciation, and action; delivery of extracts from the works of well-known writers and speakers; principles underlying speech making applied in both oral and written composition. Each section limited to twenty-five. RARIG, LINDSLEY.

*55-56-57. ARGUMENTATION AND DEBATING. Analysis, gathering of evidence, briefing. Critical study of models, including Lincoln-Douglas debates. Principles governing persuasive speaking applied in practice debates. Students in extension debating must register for this course to get credit for their work. LINDSLEY.

*81-82-83. INTERPRETATIVE READING. The interpretation and expression of the various forms of literature, such as the essay, the short story, lyric and narrative poetry, and the drama. RARIG.

*85-86-87. ADVANCED PUBLIC SPEAKING. The distinctive characteristics of oratorical style; analysis of the styles of representative orators. Written and extemporaneous speeches. Individual criticism and direction. Those desiring to prepare for the Pillsbury contest should register for this course. RARIG.

*91-92-93. PLAY PRODUCTION. Principles and practice of play production; studies of the various aspects, such as the reading of lines, characterization, action, and stage business, settings, and lighting; the coaching of plays.

*97. INTERCOLLEGIATE DEBATE AND ORATORY. The question for intercollegiate debate studied and briefed, and frequent practice debates held. RARIG, LINDSLEY.

GEOLOGY AND MINERALOGY

Professors WILLIAM H. EMMONS, Chairman; CLINTON R. STAUFFER, FRANK F. GROUT; Assistant Professors CHESSLEY J. POSEY, A. WALTER JOHNSTON, THOMAS M. BRODERICK; Instructor CARL O. DUNBAR.

REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, Courses 11, 29, 105, 111, 124, and a field course; and fifteen credits selected from the following courses:

57, 58, 59, 107, 108, 109 in Paleontology

106, 131, 132, 133, 140, 141, 166, 167 in Petrology

61, 65, 106, 112, 113, 137, 166, 167 in Mineralogy

112, 113, 125, 137, 140, 141, 144, 145, 166, 167 in Economic Geology

36, 37, 39, 116, 118, 119 in Geography

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	10†	General Geology.....	Soph., jr., sr.	None
5-6	6†	Economic Geology.....	Jr., sr.	2
7-8	2	General Geology Laboratory.	Soph., jr., sr.	Supports 1-2
11-12-13	9	Index Fossils of North Amer- ica.....	Jr., sr.	2
15	1	Minerals and Rocks.....	Jr., sr.	1 or 29
(or more)				
19	5	Elements of Paleontology....	Soph., jr., sr.	1
21-2	10†	Essentials of Mineralogy....	Soph., jr., sr.	Some course in chemistry
23-4-5	9†	Elements of Mineralogy....	Soph., jr., sr.	Some course in chemistry
27	1	Outlines of Mineralogy.....	Jr., sr.	None
29	5	General Physiography.....	Soph., jr., sr.	None
30	5	Principles of Geography.....	Soph., jr., sr.	None; 1 or 29 desirable
34	3	Meteorology.....	Soph., jr., sr.	1 or 29
*36	3	Geography of North America.	Jr., sr., grad.	9 credits from 1 or 29, 30, 34, 37, 5
37	5	Economic and Commercial Geography.....	Fr., soph., jr.	None
*39	3	Geographic Influences.....	Jr., sr.	9 credits from 1 or 29, 30, 34, 37, 5; 36 desirable
*55	3	Teachers' Course in Geogra- phy.....	Jr., sr., grad.	36 or 116 or 118
*57-8-9	9	Paleontology.....	Jr., sr.	2
*61	3	Physical Mineralogy.....	Jr., sr.	22 or 25
*65	3	Crystallography.....	Jr., sr.	22 or 25
*85	6	Field Work in Northern Min- nesota.....	Jr., sr.	2
*101	3	Sedimentation.....	Jr., sr., grad.	24-25
*105	3	Elements of Rock Study....	Jr., sr., grad.	22 or 25
*106	3	Petrography.....	Jr., sr., grad.	105
*107-8-9	9	Paleontologic Practice.....	Jr., sr., grad.	59

† All quarters must be completed before credit is given for any one quarter.

No.	Credits	Title	Offered to	Prereq. courses
*111	3	Ore Deposits.....	Sr., grad.	2, 105
*112	3	Advanced Economic Geology	Sr., grad.	111
*113	3	Problems in Ore Deposits....	Sr., grad.	112
*116	3	Geography of South America	Jr., sr., grad.	Same as for 36
*118	3	Geography of Europe.....	Jr., sr., grad.	Same as for 36
*119	3	Geography of Asia.....	Jr., sr., grad.	Same as for 36
*124-5	6	Structural and Metamorphic Geology.....	Sr., grad.	2, 105
*131-2-3	9	Advanced Petrology.....	Jr., sr., grad.	106
*137	3	Testing Economic Minerals..	Jr., sr., grad.	2, 105
*140-1	6	Applied Petrography.....	Jr., sr., grad.	131
*144-5	6	Const. and Inter. of Geologic Maps.....	Jr., sr., grad.	2
*150	10	Field Geology (Black Hills)..	Jr., sr., grad.	See members of Dept.
*151-2-3	9	Advanced General Geology..	Jr., sr., grad.	2
*166-7	6	Mineralography.....	Sr., grad.	111

1-2. **GENERAL GEOLOGY.** A synoptical treatment of materials of the earth and of geologic processes. Physiographic, dynamic, structural, and historical geology. Lectures, laboratory work, field excursions, map study, and conferences. **EMMONS, JOHNSTON, DUNBAR.**

4. **GEOLOGY OF MINNESOTA.** The physical geography and geologic history of Minnesota. The relations of industrial development to geological features, the principles of pre-Cambrian geology as exemplified in Minnesota. (Not offered in 1919-20.) **JOHNSTON.**

*5-6. **ECONOMIC GEOLOGY.** The mineral resources of the United States. The origin, distribution, and uses of the important minerals and mineral fuels. Lectures and field excursions.

7-8. **GENERAL GEOLOGY LABORATORY.** Supplements Course 1-2 with study of rocks and ores, topographic and geologic maps, fossils, and reference reading.

11-12-13. **INDEX FOSSILS OF NORTH AMERICA.** A study of fossils and their uses in correlation. A course intended primarily for mining geologists. **STAUFFER.**

15. **MINERALS AND ROCKS.** An outline study of general principles of petrography; classification of minerals and rocks and practice in their identification. **GROUT.**

19. **ELEMENTS OF PALEONTOLOGY.** An introduction to the study of fossil organisms. Lectures supplemented by field excursions. **STAUFFER.**

21-22. **ESSENTIALS OF MINERALOGY.** Crystal systems, morphological, physical, and chemical character of minerals. Occurrence, genesis, and uses of minerals of economic value. Determinative work, blowpipe analysis, sight identification. **GROUT, BRODERICK.**

23-24-25. **MINERALOGY.** The crystal systems; morphological, physical, and chemical characters of minerals; occurrence, genesis, and uses of

minerals; classification and description of common minerals; rock minerals, and common rocks. Determinative work in laboratory, blowpipe analysis, sight identification. BRODERICK, GROUT.

27. OUTLINES OF MINERALOGY. A course designed especially for teachers. Methods of identification of minerals, laboratory practice, conferences, reference reading. GROUT.
29. GENERAL PHYSIOGRAPHY. Principles of earth sculpture; physiographic changes in progress, and agencies causing them; hydrography and oceanography; planetary relations; climatology. POSEY.
30. PRINCIPLES OF GEOGRAPHY. A study of the life reactions to the major types of geographic environment; treats of the influence of climate, topography, soil, and mineral resources upon human affairs. POSEY.
34. METEOROLOGY. The properties and phenomena of the atmosphere, including composition, temperature, pressure, and circulation; the work of the Weather Bureau; the major climatic divisions of the earth and their climates. POSEY.
- *36. GEOGRAPHY OF NORTH AMERICA. The regional geography of the United States and Canada; their physiography, climate, natural resources, and people. The utilization and conservation of natural resources emphasized. POSEY.
- 37s. ECONOMIC AND COMMERCIAL GEOGRAPHY. A study of the geographic factors influencing production and trade. Natural resources in their relation to commerce and industry and the major trade routes will be emphasized. POSEY.
- *39. GEOGRAPHIC INFLUENCES. A study of the influence of geographic factors of location, topography, climate, and natural resources upon the economic, social, and political development of America. POSEY.
- *55 TEACHERS' COURSE IN GEOGRAPHY. A critical study of the materials and methods of teaching secondary school geography. POSEY.
- *57-8-9. PALEONTOLOGY. A study of fossil forms with special reference to those of geological importance. Faunas and their correlation. STAUFFER.
- *61. PHYSICAL MINERALOGY. The form, optical and physical properties of minerals; expansion and conductivity; pyro-electricity; hardness, percussion, and etch figures; cleavage and gliding planes. BRODERICK.
- *65. CRYSTALLOGRAPHY. Projection and geometric relations of crystal planes; crystal nomenclature; the relation of special properties to morphology. A study of crystal models, crystal drawing, identification of minerals from crystal measurements, and mathematical calculations. BRODERICK.

*85. FIELD WORK. About two weeks in June are spent in geologic mapping of selected areas in the iron districts of Minnesota. Involves preparation of geologic maps and written reports.

*101. PRINCIPLES OF SEDIMENTATION. Origin and structures of sedimentary deposits, with a view to the interpretation of the physical, physiographic, and climatic conditions of deposition, as recorded in the sedimentary rocks of the past. DUNBAR.

*105. ELEMENTS OF ROCK STUDY. The occurrence and genesis of igneous, sedimentary, and metamorphic rocks; their mineral and chemical composition; their structure, texture, and alteration. The classification and description of rocks. GROUT, BRODERICK.

*106. PETROGRAPHY. The identification and study of minerals and rocks by optical methods; the study of igneous rocks, crystalline schists, and metamorphic rocks. The origin and classification of rocks. GROUT, BRODERICK.

*107-8-9. PALEONTOLOGIC PRACTICE. The collection, preparation, and study of materials, with a view to gaining a working knowledge of groups of fossils and the use of literature. STAUFFER.

*111. ORE DEPOSITS. The nature, distribution, and genesis of ore deposits of the United States; relations of ore deposits to geologic structure; the deformation and superficial alteration of ore deposits. EMMONS.

*112. ADVANCED ECONOMIC GEOLOGY. First part of course treats deposits of metals, giving special attention to those outside of United States. Second half treats the nature, origin, and distribution of petroleum and discusses various oil fields of the world. EMMONS.

*113. PROBLEMS IN ORE DEPOSITS. Field excursions, map work, lectures on field and laboratory methods. EMMONS.

*116. GEOGRAPHY OF SOUTH AMERICA. Regional geography of the South American countries; their geology, topography, climate, natural resources, people. Trade relations between South American countries and the United States given special attention. POSEY.

*118. GEOGRAPHY OF EUROPE. Regional geography of Europe; the geology, topography, climate, natural resources, people, industries, and trade of these countries. POSEY.

*119. GEOGRAPHY OF ASIA. The regional geography of Asia in its physical, economic, commercial, and political aspects. POSEY.

*124-5. STRUCTURAL AND METAMORPHIC GEOLOGY. The conditions, processes, and results of metamorphism; structural features resulting from deformation under varying conditions of load. JOHNSTON.

*131-2-3. ADVANCED PETROLOGY. Advanced optical methods. Criteria for rapid identification of minerals and rocks. The uses of schedules and tables. Standard rock types. Regional and genetic studies. Petrographic reports. GROUT.

*137. TESTING ECONOMIC MINERALS. Methods of determining quality of mineral deposits, described and illustrated by laboratory tests of coal, oil, building stone, and metallic ores. GROUT.

*140-1. APPLIED PETROGRAPHY. Determination of ores and gangue minerals. Microscopic studies of paragenesis of ores and other mineral associations. Practical problems in mining and geology, settled by microscopic and optical examinations. GROUT.

*144-5. CONSTRUCTION AND INTERPRETATION OF GEOLOGIC MAPS. Methods of geological examination; study and problems in construction and interpretation of geologic maps.

*150. FIELD GEOLOGY. Detailed, systematic work conforming with official surveys. Geologic maps, structure sections, reports; paragenesis of ores and their relations to geologic structures. Field for 1920, Black Hills, South Dakota. Reports to be written week before college opens in fall. EMMONS, JOHNSTON.

*151-2-3. ADVANCED GENERAL GEOLOGY. Geologic processes and their results; development of the North American continent. STAUFFER.

*166-7. MINERALOGRAPHY. Methods of studying opaque minerals and the application of the methods to problems in ore genesis and history. BRODERICK.

GERMAN

Professor CARL SCHLENKER, Chairman; Assistant Professors OSCAR C. BURKHARD, JAMES DAVIES, ALFRED E. KOENIG, SAMUEL KROESCH, WALTER R. MYERS.

REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, the general requirements; a reading knowledge of one other foreign language. In the junior year Courses 65, 66, 67, 56, 57, 58; in the senior year at least two courses numbered between 100 and 300, with total of 18 credits, or more; and the special thesis to be completed under the instructor in charge of either of the latter courses.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	5	Beginning.....	All	None
2	5	Beginning, Intermediate.....	All	1 or 1 yr. prep. German
3	5	Beginning, Advanced.....	All	2

No.	Credits	Title	Offered to	Prereq. courses
4-5-6	9†	Beginning, Chemists.....	Chemists	None
7	3	Intermediate, Chemists.....	Chemists only	6 or 1 yr. prep. German
9	3	Prose and Poetry.....	All	Old No. 8 See note below
10	5	Rapid Reading.....	All	3
11	5	Advanced Rapid Reading....	All	10
12	5	Narrative Prose.....	All	2 yrs. prep. German
13	5	Advanced Narrative Prose...	All or 3 years prep. German	12 or Old No. 7. See note below
14	5	Prose and Poetry.....	All	13 or 4 yrs. prep. German
15	4	Narrative Prose for Chemists and Pre-medics.....		2 yrs. prep. German
25-26	6†	Elementary Scientific.....	Chemists	7
28-29	6†	Adv. Chemical German.....	Chemists	15
31-32	6†	Medical German.....	Premedics	10 or 12
40-41	6†	Commercial German.....	All	10 or 13
*50-51-52	3†	Composition.....	Soph., jr., sr.	11 or 14
*53-54-55	3†	Conversation.....	Soph., jr., sr.	See note below. 11 or 14
*56-57-58	6†	Essay Writings.....	Jr., sr.	See note below. 52
*59-60-61	6†	Oral Diction.....	Jr., sr.	55
*62	3	German Comedies.....	Soph., jr., sr.	11 or 14. See note below
*63	3	Modern Drama.....	Soph., jr., sr.	11 or 14. See note below
*64	3	Classic Drama.....	Soph., jr., sr.	62 or 63
*65	3	Survey through Reformation	Jr., sr.	6 starred credits
*66	3	Survey 18th Century.....	Jr., sr.	3 starred credits. See note below.
*67	3	Survey 19th Century.....	Jr., sr.	3 starred credits. See note below.
*71	3	Teachers' Course.....	Jr., sr.	52 and 55 or 6 starred credits
*72-73	6	Drama since 1880.....	Jr., sr.....	9 starred credits
*77	3	Faust, Part I	Jr., sr.	6 starred credits. See note below
*100-1-2	9†	Middle High German.....	Sr., grad.	9 starred credits
*103	3	Phonetics.....	Sr., grad.	9 starred credits in mod- ern langs.
*104-5-6	9†	History of the German Lan- guage.....	Sr., grad.	9 starred credits
*126-7-8	9†	Grillparzer.....	Sr., grad.	9 starred credits
*150-1-2	9†	Novelle.....	Sr., grad.	9 starred credits
*160-1-2	9†	Lyric.....	Sr., grad.	9 starred credits
*225-6-7	9†	Literary Problems.....	Grad. Honors	

† All quarters must be completed before credit is given.

NOTE: Adjustments permitted, for the year 1919-20 only, on account of the changes
in the curriculum.

Students with credit for Course 7-8-9 (old numbering), Prose and Poetry, may register for Courses 62, 63, 64.

Students with credit for Course 10-11-12 (old numbering), Drama, may register for Courses 65, 66, 77. They must not register for Courses 62, 63, 64.

Students with credit for Course 24-5-6 (old numbering), Elementary Composition, may register for Course 50-1-2.

Students with credit for Course 27-8-9 (old numbering), Elementary Conversation may register for Course 53-4-5.

Students with credit for the first quarter only of Course 7-8-9 (old numbering) should register for Course 13 to obtain the year's credit.

Students with credit for two quarters of Course 7-8-9 (old numbering) must register for Course 9 to complete credit.

SEQUENCES

For Pre-medics

Without entrance German	Courses 1, 2, 3, 10, 31-32.
With one year entrance German	Courses 2, 3, 10, 31-32.
With two years entrance German	Courses 12, 31-32.

For Chemists

Without entrance German	Courses 4-5-6, 7, 25-26.
With one year entrance German	Courses 7, 25-26.
With two years entrance German	Courses 15, 28-29.

For Business

Without entrance German	Courses 1, 2, 3, 10, 40-41.
With one year entrance German	Courses 2, 3, 10, 40-41.
With two years entrance German	Courses 12, 13, 40-41.

For Teachers' Certificate.—Minor Recommendation. Courses 50-1-2, 53-4-5, 71. Major Recommendation, Courses 50-1-2, 53-4-5, 71, 66, 67, 56-7-8 and three other starred credits.

1. BEGINNING. Pronunciation, conversation, grammar and composition; selected readings in easy prose and verse. MYERS.
2. BEGINNING, INTERMEDIATE. Continuation of Course 1. KROESCH, MYERS.
3. BEGINNING, ADVANCED. Selected texts from modern writers. SCHLENKER, KROESCH.
- 4-5-6. BEGINNING FOR CHEMISTS. Pronunciation, conversation, grammar and composition; selected readings in easy prose. DAVIES, KOENIG.
7. INTERMEDIATE FOR CHEMISTS. Continuation of Course 4-5-6. DAVIES.
9. PROSE AND POETRY. Selected reading texts from modern writers; lyrics and ballads. Offered to those who were unable to complete Course 7-8-9, in 1918-19. Offered only for the first quarter, 1919-20.
10. RAPID READING. Modern narrative prose. SCHLENKER, KROESCH.
11. ADVANCED RAPID READING. Continuation of Course 10. Selected dramas from the eighteenth and nineteenth centuries. KROESCH.
12. NARRATIVE PROSE. Reading texts selected from modern prose writers. Grammar review and composition. DAVIES.
13. ADVANCED NARRATIVE PROSE. Continuation of Course 12. DAVIES, KOENIG.
14. PROSE AND POETRY. Narrative readings and selected poetry. Composition.
15. NARRATIVE PROSE FOR CHEMISTS AND PRE-MEDICS. Reading, grammar review. DAVIES, KOENIG.

25-26. ELEMENTARY SCIENTIFIC. For chemists. Reading from simple expository. German. Selections from works on chemistry. DAVIES.

28-29. ADVANCED CHEMICAL GERMAN. Selections from more difficult works on chemistry. MYERS.

31-32. MEDICAL GERMAN. Readings from general works on physiology, anatomy, and bacteriology. BURKHARD.

40-41. COMMERCIAL GERMAN. Vocabulary of commerce, business forms; reading of texts on economics. BURKHARD.

*50-51-52. COMPOSITION. Aims to develop grammatical correctness. Translations from English selections. Essay writing on assigned subjects. MYERS.

*53-54-55. CONVERSATION. Aims to develop ease and correctness of oral expression. Organized on the laboratory basis—one hour credit with two hours of recitation and one hour of outside reading. MYERS.

*56-57-58. ESSAY WRITING. Discussion of the principles of structure and style; criticism of essays on assigned subjects. BURKHARD.

*59-60-61. ORAL DICTION. Oral exercises based upon studies in German cultural life; critical analysis of various works of German literature; argumentation and debate. KOENIG.

*62. GERMAN COMEDIES. Reading of the best comedies of the eighteenth and nineteenth centuries. DAVIES, MYERS.

*63. MODERN DRAMA. Plays of modern dramatists, Hauptmann, Sudermann, Fulda, and others. DAVIES.

*64. CLASSIC DRAMA. Plays of Lessing, Goethe, and Schiller. DAVIES.

*65. SURVEY OF GERMAN LITERATURE THROUGH THE REFORMATION PERIOD. Lectures, assigned readings, reports. BURKHARD.

*66. SURVEY OF GERMAN LITERATURE OF THE EIGHTEENTH CENTURY. Lectures, assigned readings, reports. BURKHARD.

*67. SURVEY OF GERMAN LITERATURE OF THE NINETEENTH CENTURY. Lectures, assigned readings, reports. BURKHARD.

*71. TEACHERS' COURSE. Lectures, readings, and reports; observation of classes.

*72-73. DRAMA SINCE 1880. Assigned readings, reports; occasional lectures. SCHLENKER.

*77. GOETHE'S FAUST, PART I. Reading and interpretation of the text; genesis of the work; the Faust legends, Faust books, puppet plays, Marlow's *Faustus*. SCHLENKER.

- *100-101-102. MIDDLE HIGH GERMAN. Phonology, morphology, and syntax. Translation into the modern German. *Der arme Heinrich*, *Das Nibelungenlied*, selected poems of Walther. KROESCH.
- *103. PHONETICS. A study of speech sounds, and the nature of their production with special reference to English, French, and German. Open to students of the modern languages. KROESCH.
- *104-105-106. HISTORY OF THE GERMAN LANGUAGE. Lectures, discussions, assigned readings. This course is identical with Comparative Philology. KLAEBER.
- *107. HISTORICAL GERMAN GRAMMAR. Phonology, inflection, word formation, syntax. Intended primarily for prospective teachers of German. (Not offered in 1919-20.) KROESCH.
- *120. DRAMA OF KLEIST. In addition to the study of the technique especial attention is given to the subjective character of Kleist's works. (Not offered in 1919-20.) MYERS.
- *121-122. DRAMA OF HEBBEL. Hebbel's development of the dramatic theory. (Not offered in 1919-20.) MYERS.
- *123-124-125. DRAMA OF SCHILLER. A study of Schiller's development in theory and technique of the drama from the Storm and Stress to the Classic Period. (Not offered in 1919-20.) MYERS.
- *126-127-128. GRILLPARZER AND THE AUSTRIAN SCHOOL. An intensive study of the works of Grillparzer and one other Austrian dramatist. MYERS.
- *150-151-152. DIE NOVELLE. A study of the technique and development. Assigned readings and reports. BURKHARD.
- *153-154-155. ASPECTS OF GERMAN LITERATURE OF THE NINETEENTH CENTURY. The subject of the course will be announced from year to year. Subject for 1920-21: the development of realism in the nineteenth century. (Not offered in 1919-20.) BURKHARD.
- *160-161-162. LYRIC POETRY OF THE EIGHTEENTH AND NINETEENTH CENTURIES. Historical review of the best lyric poetry and chief writers. DAVIES.
- *225-226-227. LITERARY PROBLEMS. Subject for 1919-20; romanticism in German literature. SCHLENKER.

GREEK

Professor CHARLES ALBERT SAVAGE.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2-3	15†	First-Year Greek.....	All	None
4-5-6	10 or 15	History and Epic Poetry.....	All	1-2-3
*51	3	Philosophy.....	Jr., sr.	4-5, or 4-6, or 5-6
*52	3	Oratory.....	Jr., sr.	4-5, or 4-6, or 5-6
*53	3	Dramatic Poetry.....	Jr., sr.	51, or 52
*101	3	Lyric Poetry.....	Sr., grad.	51 and 53, or 52 and 53
*102	3	Advanced Drama.....	Sr., grad.	53 or 101
*103	3 ¹	Advanced Epic Poetry.....	Sr., grad.	101 or 102
*104	3 ¹	New Testament.....	Jr., sr., grad.	51 and 52

Courses open to all. No knowledge of Greek required.

59	2	Architecture.....	Jr., sr.	None
60	2	Sculpture.....	Jr., sr.	None
61	2	Drama.....	Jr., sr.	None
62	2	Literature and Life.....	Jr., sr.	None
63	2	Mythology.....	Jr., sr.	None

† All quarters must be completed before credit is given for any one quarter.

¹ Courses 103 and 104 are offered alternately.

1-2-3. FIRST-YEAR GREEK. General principles, inflections, word-formations, syntax, elementary readings, composition. SAVAGE.

4-5-6. HISTORY AND EPIC POETRY. First quarter, selections from Xenophon's *Anabasis*, or from other historical prose; second quarter, selections from Herodotus; third quarter, selections from the *Iliad*; syntax, irregular verbs, dialectical forms; two quarters to be completed before credit is given. SAVAGE.

*51. PHILOSOPHY. Plato's *Apology*, and selections from other dialogues of Plato, or from Xenophon's *Memorabilia*. SAVAGE.

*52. ORATORY. Selections from Lysias and Demosthenes; lectures on Greek oratory. SAVAGE.

*53. DRAMATIC POETRY. One play of Euripides. Introductory course in the drama. Special attention given to mythology and literary style. SAVAGE.

*101. LYRIC POETRY. Selections from the elegiac, iambic, lyric, and bucolic poets. SAVAGE.

*102. ADVANCED DRAMA. Aeschylus, Sophocles, or Aristophanes. Special attention given to the development of the drama, and to the literary form and dramatic representation of the plays read. SAVAGE.

*103. ADVANCED EPIC POETRY. A course of rapid readings in the *Iliad* or the *Odyssey*. The object of this course is to secure as intimate an acquaintance as possible, at first hand, with Homer. SAVAGE.

*104. THE NEW TESTAMENT. Especially intended for those who are preparing for the ministry, or for some other form of religious work. Alternates with 103. SAVAGE.

COURSES OPEN TO ALL. NO KNOWLEDGE OF GREEK REQUIRED

59. GREEK ARCHITECTURE. Textbook work and illustrated lectures on Greek architecture from earliest times; stereopticon views of temples, theaters, houses, altars, tombs, and other monuments; discussion of such topics as decoration, principles of proportion, and architectural style. SAVAGE.

60. GREEK SCULPTURE. The development of Greek sculpture from its beginnings will be traced; famous statues, friezes, and reliefs will be shown and described; the personalities of the great sculptors, and their special contributions to art, will be considered. SAVAGE.

61. GREEK DRAMA. The reading and interpretation of representative Greek plays; lectures dealing with the origin, growth, character, and influence of the Greek drama; special stereopticon illustrations. Students taking this course may not receive credit for Course 62. SAVAGE.

62. GREEK LITERATURE AND LIFE. Lectures, textbook work, illustrative and assigned readings; special lectures illustrated by stereopticon views. Recommended to those who intend to teach Greek, Latin, English, or ancient history. SAVAGE.

63. GREEK MYTHOLOGY. Lectures, textbook work, and illustrative readings, supplemented by occasional stereopticon views. Recommended to those specializing in languages, literature, or philosophy. SAVAGE.

HISTORY

Professors GUY S. FORD, Chairman; ALBERT B. WHITE, WALLACE NOTE-STEIN, WILLIAM S. DAVIS; Professor of Economic History NORMAN S. B. GRAS; Associate Professors AUGUST C. KREY, SOLON J. BUCK; Assistant Professors LESTER B. SHIPPEE, MASON W. TYLER; Instructor GEORGE M. STEPHENSON.

For B.A. with Honors, see general statement.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	10	The Modern World, 1648-1918	All	None
3-4	10	English History, 1066 to Present.....	All	None
5-6	10	American History.....	Soph., jr., sr.	10 cr.
7-8	10	English History, 1815-1918..	Soph., jr., sr.	10 cr.
9-10	10	Introd. to Economic History..	Soph., jr., sr.	10 cr.
11-12-13	9	Medieval History.....	See statement	None
14	5	Europe, 1100-1648.....	Soph., jr., sr.	Hist. 1-2
*56	3	Teachers' Course.....	Seniors	See statement
*61	5	Recent American History....	Jr., sr.	15 cr. including 5-6
*71	5	Outlines of Greek History....	Jr., sr.	15 cr.
*101	3	French Revolution.....	Jr., sr., grad.	15 cr.
*103	5	Near East, Old Orient.....	Jr., sr., grad.	15 cr.
*104	5	Near East, Modern.....	Jr., sr., grad.	15 cr.

No.	Credits	Title	Offered to	Prereq. courses
*105	3	Military History.....	See statement	
*107-8	8	Europe, 1848-1914.....	Jr., sr., grad.	15 cr.
*111	5	European Background of American Immigration.....	Jr., sr., grad.	15 cr.
*112	5	History of American Immigration.....	Jr., sr., grad.	15 cr.
*115-6-7	9	Economic History, 1300-1750	Jr., sr., grad.	See statement
*121-2	6	English Backgrounds of American History.....	Jr., sr., grad.	15 cr. or 10 cr. and Pol Sci. 1
*125 ¹ (Pol. Sci.)	5	American Diplomatic History	Jr., sr., grad.	10 cr. in Pol. Sci. or Hist.
*133-4-5	9	Ancient Civilization.....	Jr., sr., grad.	See statement
*141	3	The West to 1815.....	Jr., sr., grad.	15 cr. including 5-6
*142	3	The West, 1815-1865.....	Jr., sr., grad.	15 cr. including 5-6
*153	5	The West since 1865.....	Sr., grad.	20 cr. including 5-6
*155	5	The United States, 1850-1865	Sr., grad.	20 cr. (inc. 5-6)
*157-8	10	Selected Topics Modern European Hist.....	Sr., grad.	See statement
*162-3-4	9	Selected Topics Medieval History.....	Sr., grad.	See statement
*177	5	Anglo-German Relations....	Sr., grad.	20 credits
*183	5	Stuart Period.....	Sr., grad.	20 cr. (inc. 3-4)

¹ Offered also in the Dept. of Pol. Sci.

1-2. **THE MODERN WORLD, 1648-1918.** An historical survey of the last three centuries dealing chiefly with those political, social, and economic movements which have combined to create the present-day world. **FORD, KREY, TYLER.**

3-4. **ENGLISH HISTORY, 1066 TO THE PRESENT.** General political history of England since the Norman Conquest, with special reference to development of governmental institutions. Serves as an introduction to further work in English history, literature, and politics, and to American history. **NOTESEN, WHITE.**

5-6. **AMERICAN HISTORY.** A general survey of the national period of American history, with a brief consideration of the revolutionary period as an introduction. If possible, Political Science 1 should accompany or follow this course. Prerequisite, History 1-2 or 3-4. **SHIPPEE.**

7-8. **ENGLISH HISTORY, 1815-19.** Assigned readings and lectures. Emphasis placed upon party history, the colonies, foreign relations, the social-democratic movement, and especially British foreign policy preceding the Great War. Prerequisite, 10 credits. **NOTESEN.**

9-10. **INTRODUCTION TO ECONOMIC HISTORY,** with special emphasis on the United States. Lectures and section work. A general survey of the development of agriculture, manufacture, transportation, storage, and the exchange of goods; economic crises; land, capital, management, and labor; the interplay of economic and political forces. Prerequisite, History 1-2 or 3-4. **GRAS, DICKINSON, et al.**

11-2-3. MEDIEVAL HISTORY THROUGH THE REFORMATION. Development of Europe from the fall of the Roman Empire in the West with special reference to social, intellectual, and artistic movements of the period. Open only to students of Schools of Music and Architecture. KREY.

14. EUROPE, 1100 TO 1648. The middle period of European history including the later Middle Ages, Renaissance, Reformation, and Religious Wars. Prerequisites History 1-2. KREY.

*56. THE TEACHING OF HISTORY AND GOVERNMENT. Open only to those students who have at least eighteen credits in History. Practical problems of teaching history and government in the secondary schools. KREY, et al.

*61. RECENT AMERICAN HISTORY. A study of American development from 1876 to the present time. Particular attention is paid to the economic, social, and international aspects of the period. Prerequisites, 15 credits including 5-6. SHIPPEE.

*71. OUTLINES OF GREEK HISTORY. Emphasis upon those phases of Greek history contributing most to development of later civilization and national life. Especial attention to Sparta, Athenian Constitution, Persian Wars, conquests of Alexander. Prerequisites, 15 credits. DAVIS.

*72. OUTLINES OF ROMAN HISTORY. Roman institutions which became permanent and affected later history. Conquest of Mediterranean world by Rome, founding of the Empire; early Empire also examined. Useful to prospective teachers in ancient history. Prerequisite, 15 credits. (Not offered in 1919-20.) DAVIS.

*81-2-3. ECONOMIC HISTORY OF EUROPE AND THE UNITED STATES, 1750 to the present. Graduates taking this course will do some special work. (Not offered in 1919-20.)

*101. THE FRENCH REVOLUTION. French conditions in the eighteenth century before 1774; events between 1774 and 1789 which precipitated revolution in France; reform work of the early revolution. Prerequisite, 15 credits. Reading knowledge of French desirable. FORD.

*103. THE NEAR EAST, OLD ORIENT. Origin of Egyptians, Babylonians, Assyrians, and Persians, and main features of their political history and civilization. History of the Hebrews discussed so far as it bears upon general oriental problems. Prerequisite, 15 credits. DAVIS.

*104. THE NEAR EAST, MODERN. Turkey, the Balkan States, and European diplomacy in the East since 1453, with special reference to the causes of the War of 1914. Prerequisite, 15 credits. DAVIS.

*105. MILITARY HISTORY. Survey of the history of the art of war with especial reference to the history and politics of the United States

and their bearing upon present-day problems. Some study of the "Great War" will be attempted. Open to juniors and seniors, members of R. O. T. C. Others admitted only by consent of instructor. DAVIS.

*107-8. EUROPE, 1848-1914. The development of Europe in its various phases—political, social, and economic—from the Revolution of 1848 to the outbreak of the War of 1914. Prerequisite, 15 credits. A reading knowledge of French or German will be helpful. TYLER.

*111. EUROPEAN BACKGROUND OF AMERICAN IMMIGRATION. The history of the movement of population from Europe to America, with especial emphasis on the political, economic, social, and religious forces. Prerequisite, 15 credits. STEPHENSON.

*112. HISTORY OF AMERICAN IMMIGRATION. Settlement, development, and Americanization of typical racial stocks, in America; chapter in history of American society. Contributions of European immigrants to American life; their social, political, and religious activity; their reaction to American conditions, etc. Prerequisite, 15 credits. STEPHENSON.

*115-6-7. ECONOMIC HISTORY OF EUROPE, 1300-1750. The chief interests are the manor, the town, the metropolis; national economic regulation; developments in agriculture, commerce, manufacture, and economic thought, leading up to the Industrial Revolution. Prerequisite, 15 credits in history or economics, or history and economics combined. GRAS.

*121-2. ENGLISH BACKGROUNDS AND THE AMERICAN COLONIES. Studies in the transfer of English civilization, and its early modifications and development in America. Some account taken of the contrasting French settlements. Prerequisite, 15 credits in history or 10 credits in history and 5 credits in American Government. WHITE.

*125. (Pol. Sci.) AMERICAN DIPLOMATIC HISTORY. Attention to the principles and policies guiding American diplomacy in its stages of development as well as to the methods pursued and the personality of American diplomats. Prerequisites, 10 credits in Political Science or History 5-6. WRIGHT.

*133-4-5. ANCIENT CIVILIZATION. First quarter, Greece; second quarter, Rome. Social and intellectual life of antiquity. A working knowledge of the political history assumed. Prerequisites, eighteen credits in History, or a major in Greek or Latin and six credits in History. DAVIS.

*137. ENGLISH CONSTITUTIONAL HISTORY. Origin and early development of the English government, with emphasis upon judicial institutions. (Not offered in 1919-20.) WHITE.

*141. THE WEST IN AMERICAN HISTORY TO 1815. The westward movement of population and civilization; its political, economic, and social aspects; effects upon national development. Prerequisites, 15 credits including 5-6. BUCK.

*142. THE WEST IN AMERICAN HISTORY, 1815-65. The settlement of the Mississippi Valley, and the beginnings of Pacific coast expansion; significance in general American development. This course, while offered separately, follows, and is calculated to form a natural sequence to History 141. Prerequisites, 15 credits, including 5-6. SHIPPEE.

*144-5. HISTORY OF MINNESOTA. The settlement and development—political, economic, and social—of a typical American commonwealth. (Not offered in 1919-20.) BUCK.

*153. THE WEST IN AMERICAN POLITICS SINCE 1865. An intensive study of independent parties and radical or progressive political movements. Prerequisite, History 5-6. BUCK.

*155. THE UNITED STATES, 1850-1865. An intensive study of the period beginning with the Compromise of 1850 and extending through the Civil War; consideration of social and economic questions as well as political issues. SHIPPEE.

*156. THE RECONSTRUCTION PERIOD. An intensive study of the period after the close of the Civil War. This course follows History 155 as a natural sequence. (Not offered in 1919-20.) SHIPPEE.

*157-8. SELECTED TOPICS IN NINETEENTH CENTURY HISTORY. A detailed study of selected topics in the history of the nineteenth century. Discussion based on a wide range of reading. Prerequisites, 20 credits including History 107-8 or Pol. Sci. 131-3. A reading knowledge of French or German will be required. FORD, TYLER.

*162-3-4. STUDIES IN THE TWELFTH AND THIRTEENTH CENTURIES, the problems centering mainly in the beginnings of Parliament and the Crusades. Prerequisites: eighteen credits in History, and, for the language requirements, the approval of the instructors. WHITE, KREY.

*177. ANGLO-GERMAN RELATIONS, 1900-1914. Prerequisite, 18 credits. NOTESTEIN.

*183. THE STUART PERIOD. Emphasizes selected problems connected with the Long Parliament. Prerequisites, 18 credits including 3-4. NOTESTEIN.

*201-2-3. HISTORICAL BIBLIOGRAPHY AND CRITICISM. Required of candidates for advanced degrees in History who do not present evidence of similar training elsewhere. FORD, WHITE, et al.

*205-6-7. SEMINAR IN ECONOMIC HISTORY. Some limited field or single topic in American or English economic history. Intended primarily as a training course in the methods and problems of economic history. GRAS.

*208-9-10. SEMINAR IN AMERICAN HISTORY. GRAS, BUCK, SHIPPEE.

HOME ECONOMICS

Professor MILDRED WEIGLEY, Chief; Associate Professors HARRIET GOLDSTEIN, MARION WELLER; Assistant Professors ALMA BINZEL, AMY P. MORSE, E. MAUD PATCHIN, ELIZABETH VERMILYE; Lecturer in Hygiene MARTHA B. MOORHEAD; Instructors CARLOTTA M. BROWN, HALLY J. FISHER, VETTA GOLDSTEIN, RUTH LINDQUIST, MABEL C. McDOWELL, MARGARET K. MUMFORD, ETHEL L. PHELPS, LAVINIA STINSON.

COURSES

No.	Credits	Title	Offered to	Prerequisites
3	5	Textiles.....	All	None
3	3	Textiles.....	All	None
11	3	Garment Making.....	All	None
13	5	Dressmaking.....	Soph., jr., sr.	1, 11
23	5	Foods and Cookery.....	Soph., jr., sr.	Biol. 9, 10; Chem. 3, or equiv. parallel
23	3	Foods and Cookery.....	Soph., jr., sr.	Biol. 9, 10; Chem. 3, or equiv. parallel
37	3	Home Care of the Sick.....	Jr.	Chem. 3, 7 or 21; Bact. 58
34	3	Home Management: Operation and Maintenance.....	Jr., sr.	Economics
51	3	Drawing and Design.....	All	None
52	3	Art History and Appreciation	Jr., sr.	51
53	3	Advanced Design.....	Soph., jr., sr.	51
32	5	Home Equipment.....	Jr., sr.	53
123	5	Clothing Economics.....	Sr., grad.	13, Econ.
17		Advanced Clothing Construction.....		13, Econ.
22	5	Food Economics.....	Soph., jr., sr.	21 or 23
70 (Course I)		Food Preparation in Relation to Social Work.....	(Jr., sr.) ¹	General Zoology General Chemistry desired
71 (Course I)		Elementary Dietetics for the Social Worker.....	(Jr., sr.) ¹	Food Preparation (70) General Physiology pre-req. or parallel
72		Home Management Problems for the Social Worker.....	(Jr., sr.) ¹	Courses 70 and 71 Prereq. or parallel General Econ.
40	3	Child Training.....	Sr.	Psychology

¹ Students in Sociology and Americanization by consent of dept.

3. TEXTILES. A study of textile fibers, their structure, properties, and chemical reactions; of fabrics, their structure and processes of manufacture; of art and economic considerations in selection and pur-

chase of materials for clothing and household furnishing. WELLER, McDOWELL.

11. GARMENT MAKING. Instruction and laboratory practice in hand sewing; in the reading and adaptation of commercial patterns; in the construction and use of the sewing machine; in designing, cutting, and making simple outer garments from washable materials. PHELPS.

13. DRESSMAKING. Consideration of quality, suitability, and cost of materials adapted to technique involved in construction of simple wool and silk dresses; adaptation of art principles in selection of designs; instruction and practice in methods of construction. PHELPS.

23. FOODS AND COOKERY. A course following the same general outline as 21a, but including a more detailed study of each topic. STINSON.

34. HOME MANAGEMENT: OPERATION AND MAINTENANCE. Lectures. The family budget for varying incomes, and for the "Home Management House"; household accounts. VERMILYE, MUMFORD.

37. HOME CARE OF THE SICK. (a) First aid; communicable diseases; their transmission and prevention; hygiene of infancy, maidenhood, maturity. (b) The care of the sick room; observation and care of the patient; elementary symptomatology. MOORHEAD, FISHER.

51. DRAWING AND DESIGN. Composition, perspective; principles of design and color harmony applied to live and area designs, dress designs, and interiors. HARRIET AND VETTA GOLDSTEIN.

52. ART HISTORY AND APPRECIATION. The historical development of art, architecture, decoration, furniture, and costume studied with special emphasis on design and influence upon modern styles. HARRIET AND VETTA GOLDSTEIN.

53. ADVANCED DESIGN. Problems in design for house furnishings and for costume, including dress modeling. HARRIET AND VETTA GOLDSTEIN.

32. HOME EQUIPMENT. Problems in house planning, house furnishing and equipment for various sums. Types of domestic architecture; choice of site; floor-plans; building materials; details of construction; heating; ventilating; lighting; plumbing; walls; rugs; furniture; color; hangings; pictures; gardens. MORSE.

123. CLOTHING ECONOMICS. General consideration of the economic problems in clothing production; woman's responsibility for conditions in textiles and clothing industries; study of budget for clothing and household textiles, hygiene and standardization of dress. WELLER.

17. ADVANCED CLOTHING CONSTRUCTION. Laboratory course involving the application of principles of costume modeling in the construction of one high grade garment, suit, coat, or dress. One day a week will be given to a millinery problem. WELLER, BROWN.

22. **FOOD ECONOMICS.** Cost and nutritive value of typical foods; the study of dietaries; preparation and serving of meals, the cost bearing a definite relation to the family budget. STINSON, VERMILYE.

70. **FOOD PREPARATION IN RELATION TO SOCIAL WORK.** A study of the principles underlying cookery with special emphasis on the preparation of foods to be used in the homes with limited incomes. LINDQUIST.

71. **ELEMENTARY DIETETICS FOR THE SOCIAL WORKER.** Involves principles underlying adequate feeding. Food habits of different economic and racial groups forming the basis for actual planning and preparation of meals. MUMFORD.

72. **HOME MANAGEMENT PROBLEMS.** Involves the making of sound budgets. Studies are based upon racial groups and the size of the family together with the income. VERMILYE.

40. **CHILD TRAINING.** A course dealing with application of modern science in rearing, training, and educating children. Emphasis is placed on the physical care of the baby; infant feeding; infant diseases; early training; obligation of the home; the obligation of the nation. BINZEL, FISHER.

HUMAN ANATOMY

THE MEDICAL SCHOOL

Professors CLARENCE M. JACKSON, Chairman; JOHN B. JOHNSTON, THOMAS G. LEE, RICHARD E. SCAMMON; Associate Professors CHARLES A. ERDMANN; Assistant Professor ANDREW T. RASMUSSEN.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
5-6	16	Gross Human Anatomy.....	Jr., sr.	An. Biol. 1-2
*103	8	Human Histology.....	Jr., sr.	An. Biol. 152-3-4
*107	5	Human Embryology.....	Jr., sr.	An. Biol. 152-3-4
*111	5	Human Neurology.....	Jr., sr.	103 and 107 or equivalent
*121	4	Anatomical Technique.....	Jr., sr.	Permission by instructor
*129-130-				
131	6	Topographic Anatomy.....	Jr., sr.	5-6
*133	4	Anatomy of the Fetus and Child.....	Jr., sr.	5-6 and 107 or equivalent
*134	3	Anatomy of the Newborn....	Jr., sr.	133 or equivalent
*135	2	Physical Development of Childhood.....	Jr., sr.	An. Biol. 1-2
*153-4-5-6	Ar.	Advanced Anatomy.....	Jr., sr.	Permission by instructor
*160-162-				
163	Ar.	Seminar in Growth of Children.....	Jr., sr.	135 or equivalent

NOTE: Since the number of places is limited, students must in all cases before registration obtain the written permission of the instructor in charge of the course.

5. **GROSS HUMAN ANATOMY.** Dissection, including osteology. A disarticulated skeleton issued to every two students. Every student required to dissect lateral half of the body. JACKSON, ERDMANN, et al.

*103. **HUMAN HISTOLOGY.** Microscopic study of the various tissues and organs. SCAMMON, LEE, et al.

*107. **HUMAN EMBRYOLOGY.** Development of the human body. Required of third-year medical students. SCAMMON, LEE, et al.

*111. **HUMAN NEUROLOGY.** A study of the central nervous system and sense organs. JOHNSTON, RASMUSSEN.

*121. **ANATOMICAL TECHNIQUE.** Microtechnique, reconstruction, and museum methods, etc. LEE.

*129-130-131. **TOPOGRAPHIC ANATOMY.** Based upon a study of serial cross-sections of the human body. JACKSON.

*133. **ANATOMY OF THE FETUS AND CHILD.** A survey of prenatal and postnatal human development. SCAMMON.

*134. **ANATOMY OF THE NEWBORN.** A detailed laboratory study of the anatomy of the newborn. SCAMMON.

*135. **PHYSICAL DEVELOPMENT OF CHILDHOOD.** Lectures, with study of illustrative material. Primarily for students in Education; open to others by permission. SCAMMON.

*153-154-155-156. **ADVANCED ANATOMY.** Advanced work, largely individual in character, in gross anatomy, histology, embryology, or neurology. JACKSON, JOHNSTON, LEE, SCAMMON, or RASMUSSEN.

*160-162-163. **SEMINAR IN GROWTH OF CHILDREN.** A study with graphic analysis of data on physical development of children of school age. SCAMMON.

HUMAN PHYSIOLOGY

THE MEDICAL SCHOOL

Professors ELIAS P. LYON, Dean; FREDERICK H. SCOTT; Associate Professors RICHARD OLDRING BEARD, JESSE F. MCCLENDON; Assistant Professors FRANCIS B. KINGSBURY, CHAUNCEY J. V. PETTIBONE, M. RUSSEL WILCOX; Instructor ESTHER GREISHEIMER; Assistant CHARLES C. GAULT.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2-3	6	Human Physiology.....	All	Elem. Biol. and Chem.
4	6	Human Physiology.....	All	Elem. Biol. and Chem.
6	3	Physiologic Chem.....	All	Org. Chem.
*100-101-102		Physiologic Chem.....	Jr., sr.	Org. Chem.

No.	Credits	Title	Offered to	Prereq. courses
*103	8	Physiol. of Muscle, etc.....	Jr., sr.	An. Biol. and Org. Chem.
*104	8	Physiol. of Nerv. Syst., etc..	Jr., sr.	An. Biol. and Org. Chem.
*110	3	Physical Ch. of Vital Phe- nomena.....	Jr., sr.	An. Biol. and Org. Chem
*111	3	Electro-Physiology.....	Jr., sr.	110 or ar
*112	3	Vitamines.....	Jr., sr.	111 or ar
*113	3 or ar	Problems.....	Jr., sr.	103 or ar
*131	3	Adv. Physiol. Muscle, etc...	Jr., sr.	103
*132	3	Adv. Physiol. Respiration, etc.....	Jr., sr.	104
*137	3	Foods and Practical Dietetics	Jr., sr.	102
*138	2	Physiology of Development	Jr., sr.	103
*153	Ar.	Adv. Physiol. Chem.....	Jr., sr.	102
*161	3	Urinalysis.....	Jr., sr.	102
*162	3	Chem. Analysis Blood.....	Jr., sr.	102
*163	1½ or 3	Metabolism.....	Jr., sr.	102
*164	Ar.	Quantitative Methods.....	Jr., sr.	102

† Both quarters required for credit.

1-2-3. HUMAN PHYSIOLOGY AND HYGIENE. A course offered especially to teachers, on Saturday mornings. Lectures, demonstrations, and laboratory. Repeated each quarter. LYON, BEARD, and Assistants.

4. HUMAN PHYSIOLOGY. A course offered to academic, agricultural and dental students. Lectures and laboratory work.

6. PHYSIOLOGIC CHEMISTRY. Brief course. PETTIBONE and Assistants.

*100-101-2. PHYSIOLOGIC CHEMISTRY. The components of the animal body; foods, digestion, the excreta, and metabolism. KINGSBURY, PETTIBONE and Assistants.

*103. PHYSIOLOGY OF MUSCLE, NERVE, BLOOD, CIRCULATION, AND DIGESTION. SCOTT, LYON, McCLENDON, and Assistants.

*104. PHYSIOLOGY OF THE NERVOUS SYSTEM AND SPECIAL SENSES; RESPIRATION, METABOLISM, NUTRITION, AND EXCRETION. SCOTT, LYON, BEARD, McCLENDON, and Assistants.

*110. PHYSICAL CHEMISTRY OF VITAL PHENOMENA. Osmotic pressure surface tension, electric conductivity, hydrogen-ion concentration. McCLENDON.

*111. ELECTRO-PHYSIOLOGY. The bio-electric currents, negative osmose, and further work on hydrogen-ion concentration. McCLENDON.

*112. VITAMINES. Physico-chemical conditions necessary for the preservation of the vitamines during the storage and cooking and other preparation of foods. McCLENDON.

*113. PROBLEMS IN PHYSIOLOGY. Arranged by instructors with qualified students. Each student will be assigned a topic for special laboratory study, leading in some cases to original investigation. Conference and reading. LYON, SCOTT, McCLENDON.

- *131. ADVANCED PHYSIOLOGY OF MUSCLE, BLOOD, CIRCULATION, AND DIGESTION. Alterations due to physiological conditions. SCOTT.
- *132. ADVANCED PHYSIOLOGY OF RESPIRATION, EXCRETION, METABOLISM, NERVOUS SYSTEM, AND SENSE ORGANS. Conference and laboratory. SCOTT.
- *137. FOODS AND PRACTICAL DIETETICS. A study of human foods and food values; principles of food selection, balanced rations, etc. BEARD, THOMAS.
- *138. PHYSIOLOGY OF DEVELOPMENT. The physiology of the ovum, embryo, fetus; generative functions; functional characteristics of successive ages. BEARD.
- *153. ADVANCED PHYSIOLOGIC CHEMISTRY. Course arranged by instructors with qualified students for special work. PETTIBONE, KINGSBURY.
- *161. URINALYSIS. Advanced methods. PETTIBONE.
- *162. CHEMICAL ANALYSIS OF BLOOD, including total nitrogen, total non-protein nitrogen, urea, uric acid, creatinine, cholesterol, chloride, sugar, and other constituents. PETTIBONE.
- *163. METABOLISM. Lectures and laboratory work on special phases of metabolism. Lectures may be taken alone; number of students unlimited; laboratory course limited to ten students. PETTIBONE.
- *164. QUANTITATIVE METHODS. The estimation of certain important substances in the urine, blood, and other body fluids. KINGSBURY.

JOURNALISM

Assistant Professor NORMAN J. RADDER.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
13-14	10	Reporting.....	Soph., jr., sr.	Rhet. 1 yr.
15	3	Advanced Reporting.....	Soph., jr., sr.	13-14
16-17	6	Copy Reading.....	Jr., sr.	15
18	3	News Editing.....	Jr., sr.	16-17

- 13-14. REPORTING. Organization, methods and material in newspaper production; newspaper stories; methods of gathering and writing news; laboratory practice by assignments on University publications. Regular new assignments and weekly conference with the instructor required. RADDER.
- 15. ADVANCED REPORTING. Continuation of Course 13-14 with more extended practice in covering new runs. Students are encouraged to act as correspondents for papers. Weekly conferences with instructor required. RADDER.

16-17. **COPY READING.** Instruction and practice in editing copy, correcting proof, writing headlines, make-up, rewriting, and other details of editing; and in the organization and methods of local, state, and national news gathering. RADDER.

18. **NEWS EDITING.** Continuation of Course 16-17 with detailed attention to make-up, headline writing. State and national papers will be studied from the point of make-up, balance, and arrangement. RADDER.

LATIN

Professors JOSEPH B. PIKE, Head; JOHN E. GRANRUD.

REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors in Latin*, the general requirements and a fair reading knowledge of German or French or Greek. Six credits in Latin each quarter during the junior and senior years are to be selected from Courses 121 to 213. Instead of taking all the work indicated above in Latin, the student may substitute 9 credits in Greek (third-year Greek or above) or nine credits in Greek or Roman History or nine credits in Ancient Philosophy.

COURSES

No.	Credits	Title	Offered to	Prerequisites
1-2	10†	Beginning Latin.....	All	None
3	5	Caesar.....	All	1 yr. Latin or Course 1-2
11	5	Selections.....	All	2 or 3 yrs. Latin or Courses 1-3
12	5	Selections.....	All	2 or 3 yrs. Latin or Courses 1-3
13	5	Selections.....	All	2 or 3 yrs. Latin or Courses 1-3
21	5	Livy.....	All	4 yrs. Latin or any two of Courses 11-13
22	5	Plautus & Terence.....	All	4 yrs. Latin or any two of Courses 11-13
23	5	Horace, Odes.....	All	4 yrs. Latin or any two of Courses 11-13
*51	3	Pliny's Letters.....	Soph., jr., sr.	Any two of Courses 21-33 or an equivalent
*52	3	Apuleius, Short Stories.....	Soph., jr., sr.	Any two of Courses 21-33 or an equivalent
*53	3	Suetonius, Selected Lives....	Soph., jr., sr.	Any two of Courses 21-33 or an equivalent
81	3	Teachers' Course.....	Jr., sr.	Courses 51-53 or an equivalent
*131	3	Ovid.....	Jr., sr., grad.	Any two of Courses 51-53 or an equivalent
*132	3	Seneca's Epistles.....	Jr., sr., grad.	Any two of Courses 51-53 or an equivalent
*123	3	Medieval Latin.....	Jr., sr., grad.	Any two of Courses 51-53 or an equivalent
*133	3	Petronius and Vulgar Latin..	Jr., sr., grad.	Any two of Courses 51-53 or an equivalent

† Both quarters must be completed before credit is given for either one.

- 1-2. BEGINNING LATIN. Ten weeks are spent in mastering inflexions, the remainder of the course is devoted to reading easy Latin prose and the study of elementary syntax.
3. CAESAR. Selections from the Gallic War are read. Elementary Latin composition is taken in connection. Students entering with one year of Latin may select this course.
11. SELECTIONS FROM LATIN AUTHORS. An effort is made to give a general view of Roman life and literature.
12. SELECTIONS FROM LATIN AUTHORS. A continuation of Course 3. Students entering at second quarter with two or three years preparation in Latin may select Course 12.
13. SELECTIONS FROM LATIN AUTHORS. A continuation of Course 3. Students entering at third quarter with two or three years preparation in Latin may select Course 13.
21. LIVY. Selections from Books 1 to 10.
22. PLAUTUS AND TERENCE. One play each of Plautus and Terence with a study of the beginnings of Roman drama. Students entering at second quarter with four years preparation in Latin may select Course 22.
23. HORACE, ODES. Selections from the odes and epodes. Alternates with Course 33.
33. HORACE. SATIRES AND EPISTLES. (Not offered in 1919-20.)
- *51. PLINY'S LETTERS. Selected letters of Pliny the Younger with a study of Roman society in his time.
- *52. APULEIUS, SHORT STORIES. Reading of Apuleius' tales and a study of the Roman novel.
- *53. SUETONIUS. Lives of Tiberius, Caligula, Claudius, and Nero.
81. TEACHERS' COURSE. Selected portions of the Gallic War; the principles of indirect discourse; intermediate composition; discussion of various problems connected with secondary school work in Latin.
- *121. ADVANCED VERGIL. Selections from Books 7-12 of the Aeneid. Alternates with Course 131. (Not offered in 1919-20.)
- *131. OVID. Selections from Ovid's works. Alternates with Course 121.
- *122. CICERO'S LETTERS. (Not offered in 1919-20.)
- *132. SENECA'S EPISTLES. Alternates with Course 122.
- *123. MEDIEVAL LATIN. Selected documents illustrating conflict between church and state in Middle Ages. Selections from history of Franks

by Gregory of Tours. Aims to accustom students to handle medieval Latin easily for historical and literary purposes. (Not offered in 1919-20.)

*133. PETRONIUS AND VULGAR LATIN. Selections from Petronius and the *Peregrinatio Sanctae Silviæ*. The relation of vulgar to literary Latin will be discussed.

*201-2-3. ANNALS OF TACITUS. Graduate seminar but open to students who register for honors in Latin. Alternates with Course 211-12-13.

*211-12-13. LUCRETIUS. Graduate seminar but open to students who register for honors in Latin. (Not offered in 1919-20.)

MATHEMATICS

Associate Professor WILLIAM H. BUSSEY, Chairman; Professors GEORGE N. BAUER,¹ DUNHAM JACKSON; Associate Professor ROYAL R. SHUMWAY; Assistant Professors RALPH M. BARTON, RAYMOND W. BRINK,¹ WILLIAM L. HART, ANTHONY L. UNDERHILL; Instructors MINNA SCHICK, ELLA THORP, CHESTER H. YEATON.

REQUIREMENTS OF THE DEPARTMENT

For B.A. with Honors. See the general requirements, page 23. As a part of his major work the student may take advanced courses in Astronomy and Physics subject to the approval of the Department of Mathematics.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	5	Higher Algebra.....	All	1 yr. Elem. Alg.
2 ²	5	College Algebra.....	All	1 or Prep. Higher Alg.
6 ²	5	Trigonometry.....	All	1 or Prep. Higher Alg.
16	5	Solid Geometry.....	All	2 and 6
20	5	Mathematics of Investment..	All	2 and 6
30	5	Analytic Geometry.....	All	2 and 6
*50 ³	5	Calculus I.....	Jr., sr.	30
*51 ³	5	Calculus II.....	Jr., sr.	50
*52 ³	5	Calculus III.....	Jr., sr.	51
*54	5	Teachers' Course.....	Jr., sr.	50
*62-63	6	Theory of Equations.....	Jr., sr.	50
*70	3	History of Elementary Math.	Jr., sr.	30
*71	5	Solid Analytic Geometry....	Jr., sr.	50

² Students who have had Course 1 or high-school higher algebra may take College Algebra first and Trigonometry second, or vice versa. Both are required for subsequent courses in Mathematics.

³ Courses 50, 51, 52 constitute a course in differential and integral calculus in three parts. The course is so arranged that the student may discontinue it at the end of Calculus I or the end of Calculus II, but students who expect to do graduate work in Mathematics, Physics, or Astronomy, ought to finish Calculus III.

¹Absent on leave 1919-20.

No.	Credits	Title	Offered to	Prereq. courses
*102-3-4	9	Adv. Anal. and Synthetic Geometry.....	Jr., sr.	50
*106-7-8	9	Adv. Calculus and Differen- tial Eq.....	Jr., sr.	51

Courses in Functions of a Real Variable, Modern Higher Algebra, The Method of Least Squares, Projective Geometry, and Differential Geometry, listed in the Graduate School Bulletin, are open to properly qualified juniors and seniors. For more information consult the Chairman of the Department of Mathematics.

1. HIGHER ALGEBRA. A review and a collegiate treatment of the topics of elementary algebra for those who have had one year of elementary algebra. Not open to those who presented higher algebra for entrance.
2. COLLEGE ALGEBRA. Quadratic equations, equations in the quadratic form, simultaneous quadratic equations, graphical representation, progressions, mathematical induction, the binomial theorem, permutations, combinations, probability, determinants, and the theory of equations with special reference to graphical methods.
6. TRIGONOMETRY. Logarithms and plane trigonometry.
16. SOLID GEOMETRY. A collegiate treatment of solid and spherical geometry intended primarily for those who did not have the subject in high school and who are planning to specialize in Mathematics. Not open to those who presented Solid Geometry for entrance.
20. THE MATHEMATICS OF INVESTMENT. The first principles of the mathematical theory of interest, annuities, amortization, valuation of bonds, sinking funds and depreciation, etc., with a brief discussion of probability and its application to life annuities and some problems in life insurance.
30. ANALYTIC GEOMETRY. The elements of plane analytic geometry including the geometry of the conic sections, with a brief introduction to solid analytic geometry.
- *50. CALCULUS I. Differential Calculus.
- *51. CALCULUS II. Integral Calculus.
- *52. CALCULUS III. Selected topics in differential and integral calculus with special reference to infinite series, partial differentiation, multiple integrals and applications of the calculus.
- *54. TEACHERS' COURSE. For students preparing to become teachers of secondary school mathematics. Lectures, readings, discussions, methods of presentation, assignments, lesson plans, examinations, plans for beginning courses in elementary algebra and plane geometry. Aims and outcomes of education.

*62-63. **THEORY OF EQUATIONS.** Cubic and biquadratic equations, the solution of numerical algebraic equations, reciprocal equations and the construction of regular polygons, determinants and symmetric functions with applications to systems of linear equations and the theory of elimination.

*70. **HISTORY OF ELEMENTARY MATHEMATICS.** A brief course in the history of arithmetic, algebra, and geometry intended primarily for those who are preparing to teach high-school mathematics.

*71. **SOLID ANALYTIC GEOMETRY.** The analytic geometry of space of three dimensions. It should be taken by those who expect to do graduate work in Mathematics, Physics, or Astronomy.

*102-3-4. **ADVANCED ANALYTIC AND SYNTHETIC GEOMETRY.** An introduction to modern methods of studying the straight line and the conic; the use of imaginaries in geometry; abridged notation; homogeneous coördinates; contact of conics; envelopes; anharmonic ratio; polar reciprocation; projection; inversion.

*106-7-8. **ADVANCED CALCULUS AND DIFFERENTIAL EQUATIONS.** Selected topics in advanced differential and integral calculus and a study of the more common types of differential equations with emphasis on applications to geometry, elementary mechanics, and physics.

MILITARY SCIENCE AND TACTICS

Professor FRANK H. BURTON, Colonel, Inf., U.S.A., Chairman; Assistant Professors WEST C. JACOBS, Lieutenant-Colonel, C.A., U.S.A., JERE BAXTER, Major, Inf., U.S.A., ARTHUR E. CLARK, Captain, Inf., U.S.A., ALLEN T. NEWMAN, Captain, Inf., U.S.A., HENRY C. BERTELSEN, 1st Lieutenant, Inf., U.S.A., ERNEST A. NUOFFER, 2nd Lieutenant, Inf., U.S.A.; Instructors JOHN J. BOWENS, FRANK CRAIN, ELDEN R. FOSSEY, JOSEPH HAVLICEK, HERBERT KETTLE, WILLIAM G. PALMS, Sergeants, Inf., U.S.A.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2-3	None	Military Drill.....	Fresh.	None
4-5-6	None	Military Drill.....	Soph.	1 year's drill
7-8-9	6	Military Drill and Science...	Jr.	2 years' drill
10-11-12	6	Adv. Military Drill and Science.....	Sr.	2 years' drill

1-2-3. **FRESHMAN.** Practical instruction in schools of the soldier, company, and battalion; signals, ceremonies; first aid.

4-5-6. **SOPHOMORES.** Practical and theoretical instruction in schools of the company and battalion; advance and rear guard drill; practical and theoretical instruction in guard duty. Gallery practice. Ceremonies.

7-8-9. May be taken voluntarily by others outside of the freshman and sophomore classes. No credit will be allowed for such drill for less than one year.

10-11-12. MILITARY SCIENCE. Instruction in advance and rear guards, outposts, reconnaissance, camping, duties of company commander, articles of war, records.

MUSIC

Professors CARLYLE SCOTT, Chairman; Assistant Professor DONALD N. FERGUSON; Instructors GEORGE FAIRCLOUGH, THADDEUS GIDDINGS, GERTRUDE R. HULL, HARRISON WALL JOHNSON, ABE PEPINSKY, GERTRUDE REEVES, KARL SCHEURER.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2-3	9†	Harmony.....	Fresh. Music	None
*4-5-6	6†	Counterpoint.....	Fresh. Music	1-2-3
7-8-9 ¹	no. cr.	Ear Training.....	Soph. Music	1-2-3
10-11-12 ²	6	Composition.....	Jr., sr.	
*11-12-13	3	Analysis.....	Jr., sr.	1-2-3
14-15-16	9†	History of Music.....	Jr., sr.	None
17-18-19	3†	Appreciation of Music.....	Jr., sr.	None
*20-21-22	6†	Bach and Beethoven.....	Jr., sr.	14-15-16
25-26-27 ³	3	Ensemble.....	Jr., sr.	
28-29-30 ²	6	First-Year Organ.....	Fresh. Music	
31-32-33 ²	6	Second-Year Organ.....	Soph., Music	
34-35-36	6 or 12	Third-Year Organ.....	Jr.	
37-38-39	6 or 12	Fourth-Year Organ.....	Sr.	
39-40-41	6 or 12	First-Year Pianoforte	Fresh. Music	
42-43-44	6 or 12	Second-Year Pianoforte	Soph. Music	
45-46-47	6 or 12	Third-Year Pianoforte	Jr.	
48-49-50	6 or 12	Fourth-Year Pianoforte	Sr.	
51-52-53	6 or 12	First-Year Violin.....	Fresh. Music	
54-55-56	6 or 12	Second-Year Violin.....	Soph. Music	
57-58-59	6 or 12	Third-Year Violin.....	Jr.	
60-61-62	6 or 12	Fourth-Year Violin.....	Sr.	
63-63-65	6	First-Year Vocal Training...	Fr. Music	
66-67-68	6	Second-Year Vocal Training..	Soph. Music	
69-70-71	6 or 12	Third-Year Vocal Training...	Jr.	
72-73-74	6 or 12	Fourth-Year Vocal Training..	Sr.	
75-76-77	9†	Public School Music.....	Jr., sr.	
*78-79-80	9†	Advanced Public School Music.....	Sr.	75-76-77
81-82-83	9†	Normal Piano.....	Jr., sr.	
*84-85-86	9†	Advanced Normal Piano....	Sr.	81-82-83
88-89-90 ⁴	no. cr.	Ear Training.....	Jr., Music	7-8-9
91-92-93	3	Orchestra.....	Jr., sr.	
94-95-96	6 or 12	Other Orchestral Instruments	Jr., sr.	
97-98-99 ⁵	3	University Choir.....	Jr., sr.	

† All quarters must be completed before credit is given for any one quarter.

¹ Required of Music students without credit.

² Students must have the permission of the head of the department before registering for this course.

³ Required two periods with one credit.

⁴ Junior Music students may be excused from 88-89-90 if they pass a satisfactory examination at the end of the sophomore year.

⁵ Students must have permission of the Head of the Department before registering for this course.

NOTE: All music courses are open to juniors and seniors of the College of Science, Literature, and the Arts with the required prerequisites.

1-2-3. HARMONY. The study of chords, their construction, relations, and progressions. Written exercises on basses, the harmonization of given melodies. SCOTT.

*4-5-6. COUNTERPOINT. Strict counterpoint up to eight parts; free contrapuntal harmonization of chorales and composition of smaller contrapuntal forms such as inventions. FERGUSON.

7-8-9-88-89-90. EAR TRAINING. REEVES.

10-11-12. COMPOSITION. For those specializing in music. May be taken only with the consent of the instructor. FERGUSON.

*11-12-13. ANALYSIS. The analysis of musical works as regards their formal construction: subdivisions of themes into phrases, sections, and motives. Symphonies to be presented by the local orchestra are among the compositions used in this course. SCOTT.

14-15-16. HISTORY OF MUSIC. Some account of primitive systems and of the early Christian modal and harmonic developments, leading to a general survey of musical literature from Bach to the present time. FERGUSON.

17-18-19. APPRECIATION OF MUSIC. A non-technical course. REEVES.

*20-21-22. BACH AND BEETHOVEN, WAGNER AND BRAHMS. Critical study of selections from master works of the four greatest composers. Biographical readings, topics, and analyses, giving historical and literary background to culminating periods in composition. FERGUSON.

25-26-27. ENSEMBLE. Students sufficiently advanced will be given opportunity for ensemble practice, viz., piano, four and eight hands; string and piano and vocal trios, quartets, etc. SCHEURER.

34-35-36. THIRD-YEAR ORGAN. Open to juniors. May be taken only with the consent of the instructor. FAIRCLOUGH.

37-38-39. FOURTH-YEAR ORGAN. Open to seniors. May be taken only with the consent of the instructor. FAIRCLOUGH.

45-46-47. THIRD-YEAR PIANOFORTE. Open to juniors, who have mastered technical difficulties of the degree of Czerny's *School of Velocity* and the easier Haydn and Mozart sonatas. SCOTT, FERGUSON, JOHNSON, REEVES.

48-49-50. FOURTH-YEAR PIANOFORTE. Open to seniors. Same requirements as for 45-46-47. SCOTT, FERGUSON, JOHNSON, REEVES.

57-58-59. THIRD-YEAR VIOLIN. Open to juniors. May be taken only with the consent of the instructor. SCHEURER.

60-61-62. FOURTH-YEAR VIOLIN. Open to seniors. May be taken only with the consent of the instructor. SCHEURER.

69-70-71. THIRD-YEAR VOCAL TRAINING. Open to juniors. May be taken only with the consent of the instructor. HULL.

72-73-74. FOURTH-YEAR VOCAL TRAINING. Open to seniors. May be taken only with the consent of the instructor. HULL.

75-76-77. PUBLIC SCHOOL MUSIC. Preparation for teachers and supervisors of music in the grades. Piano playing, singing, and ready sight reading prerequisite. Four hours in class and one-half day weekly in public school visiting. Practice teaching demanded. GIDDINGS.

*78-79-80. ADVANCED PUBLIC SCHOOL MUSIC. Preparation for teachers and supervisors of music in high and normal schools. Four hours in class and one half day weekly in public school visiting. Practice teaching demanded. GIDDINGS.

81-82-83. NORMAL PIANO. Special course offered to students desiring to teach pianoforte as a profession. REEVES.

*84-85-86. ADVANCED NORMAL PIANO. Practice teaching. REEVES.

91-92-93. ORCHESTRA. Practical study of orchestral literature, standard symphonies, overtures, concertos, etc., with public performances as frequently as practicable. May be taken a second year with credit. SCHEURER.

94-95-96. OTHER ORCHESTRAL INSTRUMENTS.

97-98-99. UNIVERSITY CHOIR. Open to juniors and seniors. May be taken only with the consent of the instructor. May be taken a second year with credit. SCOTT.

28-29-30. FIRST-YEAR ORGAN. FAIRCLOUGH.

31-32-33 SECOND-YEAR ORGAN. FAIRCLOUGH.

39-40-41. FIRST-YEAR PIANOFORTE. SCOTT, FERGUSON, JOHNSON, REEVES.

42-43-44. SECOND-YEAR PIANOFORTE. SCOTT, FERGUSON, JOHNSON, REEVES.

51-52-53. FIRST-YEAR VIOLIN. SCHEURER.

54-55-56. SECOND-YEAR VIOLIN. SCHEURER.

63-64-65. FIRST-YEAR VOCAL TRAINING. HULL.

66-67-68. SECOND-YEAR VOCAL TRAINING. HULL.

PHILOSOPHY

Professors NORMAN WILDE, Head; DAVID F. SWENSON; Assistant Professor RUPERT C. LODGE.

REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, besides the general requirements, thirty-six credits in starred courses, including one of the following: 120, 124-5, 135, 147, 151-2-3, 161-2-3.

Ten credits in Psychology will be accepted as prerequisites in Philosophy, except where "Cr. in Phil." are required.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	5	Problems of Philosophy.....	Soph., jr., sr.	None
2	5	Logic.....	Soph.,jr.,sr. ¹	None
3	5	Ethics.....	Soph., jr., sr. ¹	None
10	2	Science and Religion.....	Soph., jr., sr.	10 cr. in Phil. or Psy. or Biol.
*20-21	6	Present-Day Philosophy.....	Jr., sr.	10 credits
*55	3	Esthetics.....	Jr., sr.	10 credits
*63	3	Development of Religion....	Jr., sr.	10 credits
*100	3	Philosophy of Religion.....	Jr., sr., grad.	10 credits Phil.
*108-109	6	History of Ethics.....	Jr., sr., grad.	10 in any social science
*113-4-5	9	History of Philosophy.....	Jr., sr., grad.	10 credits
*120	3	Scandinavian Philosophy.....	Jr., sr., grad.	10 credits
*124-5	6	Political and Social Ethics....	Jr., sr., grad.	10 cr. in any social science
*135	3	Philosophy of Plato.....	Jr., sr., grad.	10 credits
*147	3	Advanced Logic.....	Jr., sr., grad.	10 cr. in Phil., including 2
*151-2-3	6	Kant and his Successors.....	Sr., grad.	15 cr. in Phil.
*161-2-3	9	Seminar in Philosophy.....	Sr., grad.	20 cr. in Phil.

¹ Third-quarter freshmen are admitted to this course.

1. PROBLEMS OF PHILOSOPHY. A survey course in philosophy, in which the main fields of investigation are mapped out, the permanent problems indicated, and the chief methods employed in their solution are discussed. SWENSON, LODGE.
2. LOGIC. The nature of knowledge, the laws of reasoning, the principles and methods of scientific proof. SWENSON, LODGE.
3. ETHICS. The principles of morals; sketch of the historical development of morality followed by an analysis of its meaning, and of its basis in human nature. WILDE.
10. SCIENCE AND RELIGION. Religious problems as affected by the results of modern science. SWENSON.
- *20-21. PRESENT-DAY PHILOSOPHY. An untechnical discussion of the most important types of contemporary philosophy. Among the men and movements included are: Royce, James, Eucken, Bergson, Haeckel, Neo-Realism, Nietzsche. WILDE.
- *55. ESTHETICS. An introduction to the history and theory of esthetics, psychological analysis of beauty, and a discussion of the arts. SWENSON.

- *63. DEVELOPMENT OF RELIGION. The development of religious ideas and practices; a summary of the typical historical religions; the chief methods of modern psychological investigation. SWENSON.
- *100. PHILOSOPHY OF RELIGION. Religion as an interpretation and evaluation of life; speculative idealism, the mysticism of Emerson, the estheticism of Nietzsche, the ethics of Carlyle; Christianity as a transcendent ethical religion. SWENSON.
- *105. CRITICAL IDEALISM. A systematic introduction to present-day philosophical construction. (Not given in 1919-20.) LODGE.
- *108-9. HISTORY OF ETHICS. A survey of the chief ideals of conduct and theories of life from Socrates to the present day. Emphasis will be laid, both upon the historical conditions, and also upon the permanent elements of value in the main ethical standpoints. LODGE.
- *113-4-5. HISTORY OF PHILOSOPHY. Outline of the history of thought from the Greeks to Kant. Intended as a cultural course, as well as a preparation for the study of special periods. WILDE.
- *120. SCANDINAVIAN PHILOSOPHY. The philosophical thought of the nineteenth century in Scandinavian countries, including a comparative study of Boström and Kierkegaard. SWENSON.
- *124-5. POLITICAL AND SOCIAL ETHICS. The fundamental aspects of society and the state, considered from the point of view of ethics. WILDE.
- *129. ANCIENT PHILOSOPHICAL THEORIES OF THE STATE. Introduction to the philosophical theory of the state in Greek and medieval thought. Special attention is paid to the theories of Plato and Aristotle. (Not given in 1919-20.) LODGE.
- *135. THE PHILOSOPHY OF PLATO. The reading and discussion of the principal dialogues with a view to understanding the problem and method of Greek philosophy as illustrated in the writings of Plato. LODGE.
- *147. ADVANCED LOGIC. Different topics from year to year, including the organization of the sciences, the presuppositions of knowledge, recent mathematical and symbolic logic, and the pragmatic theory of logic. SWENSON.
- *151-2-3. KANT AND HIS SUCCESSORS. Modern currents of thought from the idealism of Fichte and Hegel, to the philosophy of evolution, pragmatism, and the new realism. LODGE.
- *161-2-3. SEMINAR IN PHILOSOPHY. Individual investigation in philosophy. Studies in either ancient or modern philosophy and ethics; critical and constructive studies of logic, metaphysics, or ethics. Character

of work and general topic for year ascertained by consultation with department. **WILDE.**

Related courses in other departments: Greek 51; Latin 211-2-3, 132; Psychology 1-2-3, 108; Sociology 101, 102, 103, 108, 119, 120; Political Science 8, 107, 110, 118.

PHYSICAL EDUCATION

FOR WOMEN

Professor J. ANNA NORRIS, Chairman; Assistant Professor MAY S. KISSOCK; Instructors GERTRUDE M. BAKER, HELEN A. BARR, VALERIA G. LADD, GERTRUDE B. SCHILL, ALICE J. H. TOLG.

INTRODUCTORY STATEMENT

This Department aims primarily to promote the health of the women students. It gives physical examination and advice to all on entrance; plans systematically to keep in close touch with them during their first two years in college; conducts yearly consultations with, and examines when necessary, all upper-class students; gives courses in hygiene; organizes physical work to meet the varying needs and physical tastes of students; coöperates closely with the Woman's Athletic Association in encouraging and organizing athletic sports; holds regular office hours for the purpose of consultation with all students who desire its advice.

Work in this Department is required of all newly entering students (see Courses 1-2-3 and 11), of all sophomores (see "Sophomore" courses; sophomores who can not swim must register for Course 43 on entrance), and of all students permitted, for reasons connected with their physical condition, to carry less than the minimum number of credit hours. Physical examinations or consultations required annually of all students.

Elective classes arranged in gymnastics, dancing, swimming, field-hockey, basket-ball, baseball, and other organized games.

For a special four-year professional course designed to prepare graduates for the responsible direction of physical education activities see bulletin of the College of Education. The freshman or sophomore year of this course may be taken in 1919-20. Students desiring to enter the course should consult with the Head of this Department. They should be without organic disease or serious functional disorder, should have a keen sense of rhythm, and should possess qualities of personality which will win the coöperation of others.

Nine credits the maximum number that can be gained by taking courses in exercise (Courses 4-5-6, 7-8-9); only one of these courses may be taken for credit in a quarter.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2-3 ¹	0	Elementary Phys. Train.....	Required of all new students	None

¹ The third quarter of these courses is open to students who have not had the first quarters.

No.	Credits	Title	Offered to	Prereq. courses
4-5-6 ¹	4½	Intermed. Phys. Train.....	Jr., sr.	Equivalent of 1-2-3, 52, 53. Permission of director.
7-8-9 ¹	4½	Advanced Phys. Train.....	Sr.	4-5-6. Permission of director.
11	0	Preliminary Hygiene.....	Required of all new students	None
13	3	Personal Hygiene.....	Soph., jr., sr.	Anim. Biol. 1-2
16	3	Anatomy and Kinesiology...	Seniors	Anim. Biol. 1-2
17	3	Prin. of Gymnastic Exercise	Sr.	P. E. 4-5-6, 31-32-33, 34-35-36, 13, 16
18	3	Teachers' Course in Play....	Sr.	P. E. 4-5-6, 31-32-33-34-35-36, 13
19-20-21	0	Rhythmic Expression.....	Fr., jr., sr.	None
31-32-33	0	Folk Dancing and Organized Games.....	Fr., jr., sr.	None
34-35-36	0	Hockey, Basket and Baseball	Fr., jr., sr.	Permission of director
45	0	General Swimming.....	Fr., jr., sr.	None
22-23-24	0	Sophomore Rhythmic Expression.....	Soph.	Phys. Ed. 1-2-3
37	0	Sophomore Organized Games	Soph.	Phys. Ed. 1-2-3
38	0	Sophomore Folk Dancing....	Soph.	Phys. Ed. 1-2-3
40	0	Sophomore Major Sports....	Soph.	Phys. Ed. 1-2-3
43	0	Sophomore Elementary Swim.	Soph.	Phys. Ed. 1-2-3
44	0	Sophomore Advanced Swimming....	Soph.	Phys. Ed. 1-2-3
52-53	0	Sophomore Physical Training.	Soph.	Phys. Ed. 1-2-3

NOTE: Any course in exercise may be entered any quarter by obtaining permission of the Department.

¹ The third quarter of these courses is open to students who have not had the first two quarters.

1-2-3. ELEMENTARY PHYSICAL TRAINING. Lighter forms of gymnastics, orthopedic exercise, folk dancing, indoor and outdoor games. Study of daily habits of living. Shower bath fee, \$1 per quarter. KISSOCK, BARR, LADD, TOLG.

4-5-6. INTERMEDIATE PHYSICAL TRAINING. Gymnastics, and an election of dancing or a sport. Daily habits of living, and written abstracts. If taken for no credit, no reading or written work will be required. Shower bath fee, \$1 per quarter. KISSOCK.

7-8-9. ADVANCED PHYSICAL TRAINING. Gymnastics, and an election of dancing or a sport. Written abstracts of prescribed reading. If taken without credit, no reading will be required. Shower bath fee, \$1 per quarter. SCHILL.

11. **PRELIMINARY HYGIENE.** One lecture a week. The most essential aspects of the care of the body. NORRIS.
13. **PERSONAL HYGIENE.** Care of the personal health; elements of anatomy and physiology. NORRIS.
14. **HYGIENE OF THE FAMILY.** Eugenics, prenatal care, maternity and infancy, puberty, sex education. (Not offered in 1919-20.) NORRIS.

16. **ANATOMY AND KINESIOLOGY.** Anatomy of bones, joints, and muscles as it applies to muscular exercise. Study of gymnastic positions and movements from the standpoint of anatomy. TOLG.
17. **PRINCIPLES OF GYMNASTIC EXERCISE.** A study of the aims, purposes, and methods of physical education and the arrangement and progression of gymnastic exercises; technique of teaching and practice teaching within the class group. SCHILL.
18. **TEACHERS' COURSE IN PLAY.** A study of the various play theories, and play periods of childhood and adolescence, also lectures, discussions and actual practice in the building, care, and administration of playgrounds and the conduct of play. KISSOCK.
- 19-20-21. **RHYTHMIC EXPRESSION.** A scientific, simple, joyous form of exercise with a definite system of technique based upon nature rhythms with the object of eliminating physical tension, self-consciousness, and repression. LADD.
- 22-23-24. **SOPHOMORE RHYTHMIC EXPRESSION.** Shower bath fee, \$1 per quarter. LADD.
- 31-32-33. **FOLK DANCING AND ORGANIZED GAMES.** Graded games and folk dances for the school and playground. Two hours a week. KISSOCK.
- 34-35-36. **HOCKEY, BASKET-BALL AND BASEBALL.** Hockey in the autumn, basket-ball in winter, baseball in spring. Two hours a week. KISSOCK.
37. **SOPHOMORE ORGANIZED GAMES.** Suitable in strength for C-D girls. Conducted outdoors when weather permits. Shower bath fee, \$1 per quarter. BARR.
38. **SOPHOMORE FOLK DANCING.** Twice a week. Shower bath fee, \$1 per quarter. BARR.
40. **SOPHOMORE MAJOR SPORTS.** Suitable in strength for A-B girls. Shower bath fee, \$1 per quarter. KISSOCK.
43. **SOPHOMORE ELEMENTARY SWIMMING.** For beginners. Shower bath fee, \$1 per quarter. BAKER.
44. **SOPHOMORE ADVANCED SWIMMING.** Shower bath fee, \$1 per quarter. BAKER.
45. **GENERAL SWIMMING.** For both beginners and advanced swimmers and divers. Shower bath tickets may be bought of the matron. BAKER.
- 52-53. **SOPHOMORE PHYSICAL TRAINING.** Floor work, apparatus, and games. Orthopedic and remedial exercise for those not able to take regular class work. Shower bath fee, \$1 per quarter. BARR, SCHILL.

PHYSICAL EDUCATION

FOR MEN

Director LOUIS J. COOKE; Assistant Director WILLIAM K. FOSTER; Instructors CARL B. ROEMER, E. S. BROWN, PERCY C. GLIDDEN; Assistants KARL P. BUSWELL, HARRY GOLDIE.

The purpose of the Department is to provide all men of the University opportunity for exercise in order to maintain and build up their general health. It also provides special training for the correction of physical defects and functional derangements.

A physical examination is required of all new matriculants, and of all others using the Department privileges, at the beginning of the year, and as often during their college course as their physical condition may indicate. Students taking the required work in Physical Education are examined at the close of the year. A study of these records shows a marked improvement in the standard of health of the average student during his college course.

The gymnasium, swimming pool, and baths are open to all students of the University, who are free to use the apparatus and to pursue a course in physical training under the supervision of the Director and his assistants.

Those students, taking the required course in physical education, who can not swim must make a reasonable effort, as determined by the Department, to pass the swimming and life-saving requirements, and will be assigned special hours for instruction.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	None	Personal Hygiene.....	Fr.	None
2-3-4	None	Gymnasium and Swimming..	Fr.	None
5-6-7	2†	Advanced Leaders.....	Soph., jr., sr.	Instructor's permission
8-9-10	None	Corrective Gymnastics.....	All	None
11-12	None	Wrestling.....	All	Instructor's permission
13-14-	15	None Intermediate Swimming.....	All	Instructor's permission
16-17-	18	None Advanced Swimming.....	All	Instructor's permission
19-20	None	Boxing.....	Fr.	Instructor's permission
21-22-	23	None Intramural Athletics.....	All	None

† Full course must be completed before credit is allowed.

1. PERSONAL HYGIENE. Two hours per week; first six weeks of fall quarter. Examination at close of course. COOKE.

2-3-4. GYMNASIUM AND SWIMMING. Two hours a week. Required qualifications in swimming, life-saving, bar-vaulting, jumping, sprinting, running, and on heavy apparatus. FOSTER, ROEMER.

5-6-7. ADVANCED LEADERS. Three hours a week. FOSTER, ROEMER.

8-9-10. CORRECTIVE GYMNASTICS. Three hours a week. Special individual courses for students physically defective. BROWN.

11-12. WRESTLING. Three times per week. Students admitted by special assignment.

13-14-15. INTERMEDIATE SWIMMING. Life-saving, efficiency swimming, and fancy diving. Instruction is given in rescuing and restoring the apparently drowned and other useful swimming accomplishments. GLIDDEN, BUSWELL.

16-17-18. ADVANCED SWIMMING. Life-saving, efficiency swimming, and fancy diving. Instruction is given in rescuing and restoring the apparently drowned and other useful swimming accomplishments. GLIDDEN, BUSWELL.

19-20. BOXING. By special arrangement a few students may be accommodated in this class which meets twice per week. GOLDIE.

21-22-23. INTRAMURAL ATHLETICS. Competitive games in the various athletic leagues in football, basket-ball, hockey, track and field events, baseball, tennis, swimming, handball, bowling, etc. FOSTER.

PHYSICS

Professors HENRY A. ERIKSON, Chairman; W. FRANCIS G. SWANN, JOHN T. TATE, ANTHONY ZELENY; Professorial Lecturer LOUALLEN F. MILLER.

REQUIREMENTS OF THE DEPARTMENT

For *B.A. with Honors*, the general requirements; work chosen from courses above 90; and any course in Mathematics open only to juniors and seniors if approved by the Department. Mathematics 106, 107, 108 have already been thus approved. Thesis in connection with any course in Physics above and including 142.

Courses 21, 22, 41, 42, 51, 52, 61, 62 comprise a general course in Physics extending through four quarters. Those who intend to teach Physics in secondary schools are advised to take Courses 181-3-5 and 182-4-6 in addition to the above general course. Those who intend to enter the field of industrial research are advised to take all of the intermediate courses in addition to the general course.

COURSES

No.	Credits	Title	Offered to	Prerequisites
<i>Introductory Courses</i>				
21	4	Elements of Mechanics.....	All	Trigonometry
22	1	Elements of Mechanics Lab.	All	21 or Reg. in 21
31	3	Acoustics	All	None
41	4	Sound and Heat.....	All	21
42	1	Sound and Heat Lab.....	All	22, 41, or Reg. in 41
51	4	Light	All	21

No.	Credits	Title	Offered to	Prereq. courses
52	1	Light Lab.....	All	22, 51, or Reg. in 51
61	4	Magnetism and Electricity...	All	21
62	1	Magnetism and Electricity Lab.....	All	22, 61, or Reg. in 61

Intermediate Courses

*142	3	Pyrometry and Heat.....	Jr., sr., grad.	42, 62
*162	3	Electrical Meas.....	Jr., sr., grad.	62
*171-3-4	9	Radioactivity.....	Jr., sr., grad.	42, 52, 62, Math. 52
*181-3-5	9	Theoretical Phys.....	Jr., sr., grad.	41, 51, 61, Math. 52
*182-4-6	9	Experimental Phys.....	Jr., sr., grad.	42, 52, 62
*191-3-5	9	Elements of Math. Phys.....	Sr., grad.	42, 51, 61, Math. 52
*192-4-6	12	Elementary Physical Investi- gation.....	Sr., grad.	182-4-6

INTRODUCTORY COURSES

21. ELEMENTS OF MECHANICS. Mechanics of solids, fluids, and wave motion. A study of the simpler fundamental principles. First part of a general Course 21, 41, 51, 61. Course 22 should be taken in conjunction with this course. One lecture, three recitations a week. ZELENY, TATE, MILLER.
22. ELEMENTS OF MECHANICS LABORATORY. Measurements in the mechanics of solids, fluids, and wave motion; the laboratory part supplementing Course 21. One two-hour session in the laboratory a week. MILLER.
31. ACOUSTICS. A study of the fundamental principles of sound. A course designed primarily for the students in the Department of Music. Open also to other students. Three lectures a week. ERIKSON.
41. SOUND AND HEAT. A study of the principles underlying sound and heat phenomena. Course 42 should be taken in conjunction with this course. One lecture, three recitations a week. ZELENY, MILLER.
42. SOUND AND HEAT LABORATORY. The laboratory part supplementing Course 41. One two-hour session in the laboratory a week. MILLER.
51. LIGHT. A study of the principles underlying light phenomena. Course 52 should be taken in conjunction with this course. One lecture, three recitations a week. ZELENY, MILLER.
52. LIGHT LABORATORY. The laboratory part supplementing Course 51. One two-hour session in the laboratory a week. MILLER.
61. MAGNETISM AND ELECTRICITY. A study of the principles underlying magnetic and electric phenomena. Course 62 should be taken in conjunction with this course. One lecture, three recitations a week. ZELENY, MILLER.
62. ELECTRICAL LABORATORY. The laboratory part supplementing Course 61. One two-hour session in the laboratory a week. ZELENY.

INTERMEDIATE COURSES

- *142. PYROMETRY AND HEAT. An experimental study of pyrometry, heat quantity, heat transfer, hygrometry, and gas liquefaction. One lecture, two three-hour sessions in the laboratory a week. MILLER.
- *151-2. GEOMETRICAL AND PHYSICAL OPTICS. (Not offered in 1919-20.)
- *162. ELECTRICAL MEASUREMENTS. Devoted mainly to the study of potentiometer methods, capacity, inductance, magnetic flux, and temperature measurement by electrical methods. Three two-hour laboratory periods a week. ZELENY.
- *171-3-4. RADIOACTIVITY. An analytical study of the theories, and methods of investigation, supplemented by laboratory technique.
- *181-3-5. THEORETICAL PHYSICS. An intensive analytical survey of the fundamental principles of mechanics, sound, heat, light, electricity, and magnetism, designed to supplement the general course and to prepare students for more specialized graduate courses. Three lectures a week. TATE.
- *182-4-6. EXPERIMENTAL PHYSICS. A comprehensive course extending through the year, designed to familiarize students with fundamental and standard methods of precise measurements as exemplified by representative experiments in mechanics, sound, heat, light, and electricity. May be begun any quarter. ERIKSON, MILLER, TATE, ZELENY.
- *191-3-5. ELEMENTS OF MATHEMATICAL PHYSICS. A study of the fundamental principles and standard methods involved in the mathematical analysis of physical problems. Three lectures a week. TATE.
- *192-4-6. ELEMENTARY PHYSICAL INVESTIGATION. The experimental or theoretical study of physical phenomena the nature or laws of which are not as yet understood. ERIKSON, SWANN, TATE, ZELENY.

POLITICAL SCIENCE

Professors CEPHAS D. ALLIN, Chairman, JEREMIAH S. YOUNG; Associate Professors ROBERT E. CUSHMAN, RAYMOND MOLEY;¹ Assistant Professors WILLIAM ANDERSON, QUINCY WRIGHT; Instructor ALBERT J. LOBB.

REQUIREMENTS OF THE DEPARTMENT

For B.A. with Honors, see general requirements.

Professional Courses. The attention of those who are preparing themselves for the public service is called to the special training courses outlined on pages 30, 31, 32 of the Bulletin. Further information may be had from the chairman of the department.

Bureau of Research in Government. This bureau is organized to conduct and direct special investigations into practical political and adminis-

¹ Absent on leave, 1919-20.

trative problems, national, state, and local. Dr. Raymond Moley will act as Director, but all members of the staff will take part in the work of the bureau. Advanced and graduate students are strongly urged to take advantage of its facilities.

COURSES

Beginning Courses

No.	Credits	Title	Offered to	Prereq. courses
1	5	American Government.....	Soph., jr., sr. ¹	None
3	5	Comparative European Gov- ernment.....	Soph., jr., sr. ¹	None

Intermediate Courses

7	5	State and Local Government.	Soph., jr., sr.	1
11	5	Municipal Government.....	Soph., jr., sr.	1
15	5	Introduction to Political Sci- ence.....	Soph., jr., sr.	1 or 3
21	5	Colonial Government.....	Soph., jr., sr.	1 or 3
31	5	Political Parties.....	Soph., jr., sr.	1 or 3

Advanced Courses

*51-2-3	9	Business Law.....	Jr., sr.	10 cr. in Pol. Sci. or 10 cr. in Econ. or 5 cr. in each.
*58	5	Elementary Law.....	Jr., sr.	10 cr. in Pol. Sci., or 5 in Pol. Sci. and 5 in Soci- ology
*111	3	Government of Minnesota...	Jr., sr., grad.	1 and 7 or 11 or 31
*115	3	Municipal Problems.....	Jr., sr., grad.	11
*118	3	Government and the Immig- rant.....	Jr., sr., grad.	10 cr. or Americanization 5
*121-2	8	International Law.....	Jr., sr., grad.	10 cr. in Pol. Sci. or His- tory 107-108.
*125	5	Amer. Diplomatic History...	Jr., sr., grad.	10 cr. in Pol. Sci. or His- tory 5-6
*127	5	Amer. Foreign Relations.....	Jr., sr., grad.	121-2 or 125
*131-2	6	World Politics.....	Jr., sr., grad.	10 cr. in Pol. Sci. includ- ing Course 3 or History 107-108 or History 81- 82-83
*135	3	Contemporary Political Prob- lems.....	Jr., sr., grad.	10 cr.
*151-2	8	Constitutional Law.....	Jr., sr., grad.	13 cr.
*155-6	5	Comparative Administrative Law.....	Jr., sr., grad.	13 cr.
*157	5	Police Power.....	Jr., sr., grad.	13 cr. in Pol. Sci. or Econ. or Soc.
*165-6	6	British Empire.....	Jr., sr., grad.	13 cr. in Pol. Sci. or Hist. 7-8, or Hist. 81-82-83
*167	3	British Constitutional Law..	Jr., sr., grad.	165-6
*171	3	Municipal Corporations....	Jr., sr., grad.	15 cr. in Pol. Sci. includ- ing one starred course
*175	4	Law of Labor.....	Jr., sr., grad.	151-2 or 157, or Econ. 161 or 13 cr. in Econ.
*181	3	Modern Political Thought...	Jr., sr., grad.	13 cr. including Course 15 or Philosophy 127

¹ Also open to freshmen who have had 10 credits in History.

No.	Credits	Title	Offered to	Prereq. courses
*191-2-3	9	Development of International Law and Organization.....	Sr., grad.	121-2-3, or History 107-8, or History 159-60
*Econ. 155	3	Business and Government...	Sr., grad.	See Economics
*Econ. 191-2	6	Public Finance,.....	Jr., sr., grad.	See Economics or 13 cr. in Pol. Sci.
*Econ. 193	3	State and Local Taxation....	Jr., sr., grad.	See Econ.
Hist. 7-8	10	English History, 1815-1918..	Soph., jr., sr.	See History
*Hist. 177	5	Anglo-German Relations, 1900-1914.....	Sr., grad.	See History
Civ. Eng.				
53, 3	3	Municipal Engineering.....	Jr., sr.	11
*201-2-3	9	Seminar in Public Law.....	Grad. and srs. with suitable preparation	Consent of instructor
*211-2-3	9	Seminar in Modern Government and Political Theory..	Grad., and srs. with suitable preparation	Consent of instructor
*221-2-3	9	Seminar in Local Government and Administration..	Grad. and srs. with suitable preparation	Consent of instructor

ALLIED COURSES IN OTHER DEPARTMENTS

Economics 11-12, 76, 105, 154, 161, 162, 167; Education 124-5-6; History 5-6, 9-10, 61, 104, 107-8, 120-1, 157-8; Philosophy 127, 135; Sociology 6, 55, 101, 104.

BEGINNING COURSES

1. AMERICAN GOVERNMENT. Origin and nature of the American governmental system; organization and actual workings of the national government to-day.
3. COMPARATIVE EUROPEAN GOVERNMENT. The governments and politics of the great European powers of to-day.

INTERMEDIATE COURSES

7. STATE AND LOCAL GOVERNMENT. A comparative study of American state governments. The adoption and amendment of constitutions; organization, powers, and methods of the three departments; problems of administrative reorganization. CUSHMAN, LOBB.
11. MUNICIPAL GOVERNMENT. The growth of cities in the United States. The evolution of the council, mayor, commission, and city-manager forms of government; their relative merits. Popular control. Municipal functions. Departmental organization and civil service. ANDERSON.
15. INTRODUCTION TO POLITICAL SCIENCE. Introductory presentation of the problem of government. The nature of the state, the forms and functions of government, the principles of politics. ANDERSON.

21. COLONIAL GOVERNMENT. Ancient and modern colonization; principles of government and methods of administration in the chief French, Dutch, English, and American colonies and dependencies. ALLIN.

31. POLITICAL PARTIES. The nature and functions of political parties in modern democratic states. Organization and methods of parties; legal control of parties and elections; public opinion as a factor in popular government. (Not offered in 1919-20.)

ADVANCED COURSES

*51-2-3. BUSINESS LAW. Principles governing ordinary business transactions. Contracts—formation, operation, interpretation, breach, and discharge. Agency and service. Negotiable instruments. Business associations—partnerships and private corporations. Property—personal and real. YOUNG.

*58. ELEMENTARY LAW. Legal principles governing the family and personal relations; judicial decisions regarding social and economic problems; the administration of justice from the standpoint of the citizen. LOBB.

*111. GOVERNMENT OF MINNESOTA. The development and present organization of the state government; its relation to the local governments; the growth of the state constitution; present problems and proposed changes. LOBB.

*115. MUNICIPAL PROBLEMS. A specialized course in modern, legal, administrative, and functional problems of cities. The content of the course will change from year to year, keeping abreast of municipal progress. ANDERSON.

*118. GOVERNMENT AND THE IMMIGRANT. The legal and administrative aspects of Americanization. Federal and state laws affecting immigration, citizenship, and naturalization; the practical administration of these laws through governmental agencies; the political experiences of the foreign-born. (Not offered in 1919-20.)

*121-2. INTERNATIONAL LAW. Nature, sources and sanction of international law; status of nations, rules of peace, neutrality and war. Emphasis upon application of principles to concrete cases. Special attention in the first quarter to diplomatic and consular practice. WRIGHT.

*125. AMERICAN DIPLOMATIC HISTORY. Attention to the principles and policies guiding American diplomacy in its stages of development as well as to the methods pursued and the personalities of American diplomats. WRIGHT.

*127. AMERICAN FOREIGN RELATIONS. Such topics as the Monroe Doctrine, Freedom of the Seas, the Open Door, Arbitration, Disarmament, will

be considered with particular reference to the future policy of the United States. **WRIGHT.**

*131-2. **WORLD POLITICS.** A study of the foreign policies and international relations of the leading European powers to-day. **ALLIN.**

*135. **CONTEMPORARY POLITICAL PROBLEMS.** The League of Nations; parliamentary government; reorganization of our state governments; administrative centralization; government by commission; electoral ballot, budgetary, and civil service reforms; proportional representation; initiative, referendum, and recall; responsibilities of citizenship. **YOUNG.**

*145. **LEGISLATIVE POWER AND METHODS.** Source and scope of the legislative power; methods used by legislative bodies; current political questions; formulation and defense of legislative bills. (Not offered in 1919-20.) **YOUNG.**

*151-2. **CONSTITUTIONAL LAW.** Judicial interpretation of the constitution; power of judicial review; separation of governmental powers; relation of state and national governments; construction of national powers; protection of civil and political rights; jurisdiction of the courts. **CUSHMAN.**

*153. **NATIONAL AND STATE ADMINISTRATION.** The principles of American administrative organization and the operation of administrative departments, and of important administrative boards and commissions. (Not offered in 1919-20.)

*155-6. **COMPARATIVE ADMINISTRATIVE LAW.** Administration as a science; origin and development; and analysis of the administrative systems of the United States, England, France, and Germany, with special reference to the law of officers, the merit system, and special administrative tribunals. **YOUNG.**

*157. **POLICE POWER.** Nature of the police power; constitutional aspects of social and economic legislation, including safety, order, morals, and protection against business fraud and oppression; the fundamental rights under the police power. **YOUNG.**

*161. **COMPARATIVE FEDERAL GOVERNMENT.** Ancient and modern federal unions, especially the constitutions of the United States, Switzerland, Canada, and Australia, the South African Union, and the proposals for imperial federation. (Not offered in 1919-20.) **ALLIN.**

*165-6. **GOVERNMENT AND POLITICS OF THE BRITISH EMPIRE.** Analysis of the organization and workings of the present British constitution; the political parties, leaders, and platforms; influences of parties on imperial politics and government. **ALLIN.**

- *167. BRITISH CONSTITUTIONAL LAW. A study of the principles of the Common Law in relation to the English constitution together with an analysis of the judicial interpretation of some of the most important acts of parliament. ALLIN.
- *171. MUNICIPAL CORPORATIONS. The legal basis of municipal government; the relation of the city to the state; home rule. The city as a legal entity; its powers, duties, and liability for torts. ANDERSON.
- *173. LAW OF MUNICIPAL IMPROVEMENTS. Legal problems involved in programs for municipal improvement and city planning; taxation, special assessments, eminent domain, and the police power. (Not offered in 1919-20.) CUSHMAN.
- *175. LAW OF LABOR. Constitutional aspects of laws for the protection of labor; regulation of hours and wages; legal restraints on labor; legality of strikes, boycotts, picketing, etc. Legal aspects of settlement of labor disputes. CUSHMAN.
- *181. MODERN POLITICAL THOUGHT. The state in the modern age. Sovereignty and liberty. Individualism and socialism. Democracy. Recent literature on the forms and functions of government. ANDERSON.
- *191-2-3. DEVELOPMENT OF INTERNATIONAL LAW AND ORGANIZATION. The classics in international law, systems of international relations, international administrative organizations and leagues of nations. WRIGHT.
- *201-2-3. SEMINAR IN PUBLIC LAW. YOUNG, et al.
- *211-2-3. SEMINAR IN MODERN GOVERNMENT AND POLITICAL THEORY. ALLIN, et al.
- *221-2-3. SEMINAR IN LOCAL GOVERNMENT AND ADMINISTRATION.

NOTE.—A student registered in a seminar course will be expected to complete a satisfactory piece of research before receiving credit for the course.

The Bureau of Government Research is designed to give all possible assistance in the conducting of such research, but is not intended to relieve the student of his personal responsibility.

PSYCHOLOGY

Associate Professors RICHARD M. ELLIOTT, Chairman; WILLIAM S. FOSTER, HERBERT WOODROW; Assistant Professors MABEL R. FERNALD, KARL S. LASHLEY,¹ JOHN J. B. MORGAN; Instructor FRANCES E. LOWELL.

REQUIREMENTS OF THE DEPARTMENT

For B.A. with Honors, besides the general requirements, twenty-four credits in starred courses. Starred courses in Educational Psychology

¹ Absent on leave, 1919-20.

and, to the extent of six credits, in Philosophy, may be counted in partial fulfillment of this requirement.

Students who desire to do research work should consult with the chairman of the Department.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2-3	9	General Psychology.....	Soph., jr., sr.	None
*101-102	6	Experimental Psychology....	Jr., sr., grad.	1-2-3
*103	3	Quantitative Psychology....	Jr., sr., grad.	1-2-3
*108-109	6	Advanced General Psychology	Jr., sr., grad.	1-2-3
*114-115	6	Human Behavior.....	Jr., sr., grad.	1-2-3
*119-120	6	Animal Behavior.....	Jr., sr., grad.	1-2-3
*121	3	Neuro-Psychology.....	Jr., sr., grad.	1-2-3
*125-126	6	Differential Psychology.....	Jr., sr., grad.	1-2-3
*127	3	Social Psychology.....	Jr., sr., grad.	1-2-3
*131-132-				
133	9	Child Mind.....	Jr., sr., grad.	1-2-3
*137-138	6	Applied Psychology.....	Jr., sr., grad.	1-2-3
*144-145	6	Abnormal Psychology.....	Jr., sr., grad.	1-2-3
*200-1-2	6-9	Seminar.....	Sr., grad.	By permission

1-2-3. **GENERAL PSYCHOLOGY.** An introductory survey of psychology; its material, fundamental laws, applications, and relations to other sciences. Laboratory experiments provide illustrative material and training in methods. One lecture, one recitation, two laboratory hours per week. All instructors.

*101-102. **EXPERIMENTAL PSYCHOLOGY.** A laboratory course of standard experiments in the analysis and measurement of mental phenomena. One lecture, four laboratory hours per week. WOODROW.

*103. **QUANTITATIVE PSYCHOLOGY.** Psychophysics and the theory of mental measurement. One lecture, four laboratory hours per week. WOODROW.

*108-109. **ADVANCED GENERAL PSYCHOLOGY.** A systematic presentation of the laws of mental activity. FOSTER.

*114-115. **HUMAN BEHAVIOR.** An analysis from the point of view of the objective school of psychologists. ELLIOTT.

*119-120. **ANIMAL BEHAVIOR.** The development of reaction-systems in animals, with emphasis upon the application of studies of animals to the solution of general problems in physiological psychology. Animal Biology, 1-2-3 is advised as a prerequisite. One lecture four laboratory hours per week.

*121. **NEURO-PSYCHOLOGY.** Specialization of functions in the nervous system in relation to behavior. Discussion from the standpoint of psychology of current theories of integration and localization. Two lectures, two laboratory hours per week.

*125-126. DIFFERENTIAL PSYCHOLOGY. Important distinguishing characteristics (psychological) of individuals and of groups. Emphasis on experimental and statistical methods of discovering differences and of making comparisons. Each student participates in investigation of definite problems and in analysis of results. FERNALD.

*127. SOCIAL PSYCHOLOGY. Study of the dependence of familiar forms of social organization and behavior upon the fundamental laws of mental activity. The adjustment of the innate mental equipment of the individual to the norms of social groups. FERNALD.

*131-2-3. CHILD MIND. General intelligence and special mental abilities; their development and their relation to heredity, physiological factors, education, speech defects, and delinquency. LOWELL.

*137-138. APPLIED PSYCHOLOGY. A survey of the applications of psychology, with especial reference to business. MORGAN.

*144-145. ABNORMAL PSYCHOLOGY. A systematic review of psychopathology in relation to normal behavior. MORGAN.

200-1-2. SEMINAR. Selected topics from the history of psychology. Open to advanced students with permission of the instructor. Six to nine credits in proportion to work done. FOSTER.

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

Professor MELVIN E. HAGGERTY; Assistant Professors HERMIONE L. DEALEY, MARVIN J. VAN WAGENEN.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
55	3	Elem. Educ. Psychology.....	Soph., jr., sr.	6 credits in Psychol. of which 3 may be in Educ. Psychology
106-107-				
108	9	Adv. Educ. Psychology.....	Sr., grad.	55 or equivalent
110	3	Psychology of Secondary School Subjects.....	Sr., grad.	55 or equivalent
111	3	Educational Diagnosis.....	Sr., grad.	55 or equivalent
111T-112T	4	Educational Diagnosis..... (for teachers)	Sr., grad.	55 or equivalent
116	2	Psychology of Elementary School Subjects.....	Sr., grad.	
126-127	4	Methods of Educ. Research...	Sr., grad.	
128	2	Review of Statistical Studies..	Sr., grad.	126-127
134-135-136	6	Mental Tests and Mental Diagnosis	Sr., grad.	55 or equivalent
137-138-				
139	3 to 9	Experimental Education.....	Sr., grad.	Advanced courses necessary to pursue problems. Consult instructor
140	2	Psychology and Vocational Advisement.....	Sr., grad.	
149-150-				
151	3 to 9	Psycho-Educational Clinic...	Sr., grad.	Ed. 134-135-136, or equivalent

No.	Credits	Title	Offered to	Prereq. courses
156	3	Psychological Problems of Voc. Educ.....	Sr., grad.	
201-202- 203	6	Seminar in Educational Psy- chology.....	Sr., grad.	106-107-108

55. ELEMENTARY EDUCATIONAL PSYCHOLOGY. A survey of fundamental facts of human behavior involved in educational activities. Open to seniors, juniors, and qualified students in third quarter of sophomore year upon advice of Professor HAGGERTY.

106-107-108. ADVANCED EDUCATIONAL PSYCHOLOGY. Advanced work in genetic psychology, origin and nature of human organism, development and control of instincts; their relation to group activities. Methods of measuring rate of learning; study of typical learning experiments and an examination of the conditions of the most economic learning. Study of group and individual differences and their relations to educational practice.

110. PSYCHOLOGY OF SECONDARY SCHOOL SUBJECTS. Review of experimental results dealing with content of high-school curriculum, with a discussion of the bearing of these results upon selection of the content of high-school subjects and the methods of presenting it effectively.

111. EDUCATIONAL DIAGNOSIS. The typical educational problems involving educational scales and standard tests. Nature of tests, methods of use, analysis of results obtained, and programs of remedial educational procedure based on the results of the test.

111T-112T. EDUCATIONAL DIAGNOSIS (for teachers).

116. PSYCHOLOGY OF ELEMENTARY SCHOOL SUBJECTS. Review of experimental results dealing with elementary school subject-matter; a discussion of the direct bearing of these findings upon selection and method of presentation of the content of various subjects of the elementary school curriculum.

126-127. METHODS OF EDUCATIONAL RESEARCH. A study of statistical and other methods as applied to educational investigation. This course is ordinarily required of all candidates for advanced degrees.

128. REVIEW OF STATISTICAL STUDIES. A survey of statistical studies in education with special reference to the methods employed and the reliability of the results obtained.

134-135-136. MENTAL TESTS AND MENTAL DIAGNOSIS. Study of mental variation in children, its nature, degree, causes, and effects. Methods of treating superior and subnormal children in the schools. A laboratory course in the study of individual differences by means of mental tests.

137-138-139. **EXPERIMENTAL EDUCATION.** The application of experimental methods to educational research. Problems in mental measurement, educational and mental diagnosis, and the psychology of learning, will be set as individual problems for properly prepared students.

140. **PSYCHOLOGY AND VOCATIONAL ADVISEMENT.** A study of different forms of measurement used in the analysis of individual behavior from the standpoint of special interests and vocational aptitudes and their relationship to various occupations.

149-150-151. **PSYCHO-EDUCATIONAL CLINIC.** Conducted in coöperation with the Department of Sociology and the Medical School clinics in pediatrics and nervous and mental diseases. Students will receive systematic instruction in giving psychological examinations and in scientific interpretation of data.

156. **PSYCHOLOGICAL PROBLEMS OF VOCATIONAL EDUCATION.** A practical course covering the psychological facts and principles involved in vocational education, and in industrial and commercial administration. Attention given to matters of personnel, acquisition of skill, motivation of workers, and efficiency of administration.

201-202-203. **SEMINAR IN EDUCATIONAL PSYCHOLOGY.** A research course for graduate students. Required of all students writing theses in educational psychology.

ROMANCE LANGUAGES

Professors EVERETT WARD OLMSTED, Head; COLBERT SEARLES, IRVILLE C. LECOMPTE; Associate Professors RALPH E. HOUSE, RUTH S. PHELPS; Assistant Professors FRANCIS B. BARTON, JULES FRELIN, EDWARD H. SIRICH; Instructors THOMAS W. BUSSON, HERBERT E. CLEFTON, NELSON COBURN, JOSEPHINE DE BOER, SOLOMON M. DELSON, MARGUERITE GUINOTTE, GUSTAAF VAN ROOSBROECK, SAMUEL VASCONCELOS; Teaching Fellows ETHEL ELLIOTT, CAMILA HENRIQUEZ URENA, PAUL KRAMER, OLIVE NOTT.

REQUIREMENTS OF THE DEPARTMENT

For B.A. with Honors, general requirements: a reading knowledge of Latin or German with two years' work in Spanish or Italian, if French is the major subject, or two years' work in French or Italian, if Spanish is the major subject.

In the junior year, Courses 84-85-86, 87-88-89, 97-98-99, and 100-101-102, if French is the major subject; and Courses 37-38-39, 46-47-48, 49-50-51, and 151-152-153, if Spanish is the major subject. In the senior year, Courses 103-104-105, 131-132-133, 134-135-136, and 112-113-114, or any other two-hour advanced course, if French is the major subject; or Courses 154-155-156, 157-158-159, 163-164-165, and 169-170-171, or any other two-hour advanced course, if Spanish is the major subject. Substitutions

may be made for these courses with the approval of the Department. Alternation of courses required in the junior and senior years is allowable.

Certificate of Aptitude.—The Department grants a certificate of aptitude to those students who have completed in a satisfactory manner certain prescribed courses destined to fit them for teaching French or Spanish in the secondary schools. For details, consult bulletin at Room 200 F.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
<i>French</i>				
1-2-3	9†	Beginning French.....	Architects	None
4-5	10†	Beginning French.....	All	None
7-8	10†	Intermediate French.....	All	4-5 or 2 years of high-school French
10-11	10†	Survey of French Lit.....	All	7-8 or 3 years of high-school French
13-14-15 ¹	9†	Survey of French Lit.....	All	7-8 or 3 years of high-school French
16-17-18 ¹	3†	Elem. French Conversation	All	7-8 or 3 years of high-school French
19-20-21 ¹	3†	Elem. French Composition.	All	7-8 or 3 years of high-school French
22-23-24	9	French Scientific Reading ²	Pre-Medics	4-5, or 2 years of high-school French
*81	5	French Phonetics.....	Jr., sr.	13-14-15
*184-85-86	3†	Advanced French Conversation.....	Jr., sr.	16-17-18
*187-88-89	3†	Advanced French Composition.....	Jr., sr.	19-20-21
*90	3	Teachers' Course.....	Jr., sr.	See below
*197-98-99	9†	French Lit. Nineteenth Century.....	Jr., sr.	13-14-15
*100-101-102	9†	French Lit. Seventeenth Century.....	Jr., sr., grad.	13-14-15
*103-104-105	9†	French Lit. Eighteenth Century	Jr., sr., grad.	13-14-15
*106-107-108	9†	French Lit. Sixteenth Century	Sr., grad.	100-101-102 or 103-104-105
*109-110-111	6†	French Dramatic Literature	Jr., sr., grad.	100-101-102- or 103-104-105
*112-113-114	6†	French Lyric Poetry.....	Jr., sr., grad.	97-98-99
*118-119-120	6†	French Realistic Novel: Nineteenth Century....	Jr., sr., grad.	97-98-99 or with permission of instructor
*121-122-123	6†	Lectures in French.....	Jr., sr., grad.	13-14-15 and 84-85-86
*131-132-133	6†	French Oral Diction.....	Jr., sr., grad.	84-85-86
*134-135-136	3†	French Syntax and Composition	Jr., sr., grad.	87-88-89

† All quarters must be completed before credit is given for any one quarter.

¹ Courses 13-14-15, 16-17-18 and 19-20-21 may be combined to form a five-hour unit course for Junior College students. The unit course thus formed may be dropped at the end of the second quarter, but the third quarter's work must be completed before more advanced courses in French may be elected. Courses 37-38-39, 40-41-42, and 43-44-45 may be combined in like manner to form a unit course in Spanish. Courses 84-85-86, 87-88-89, and 97-98-99 may also be combined under the same conditions.

² Pre-medical students entering without any preparation in French, will take Courses 4-5, 7, 23, and 24. Course 8 may be taken if desired, but is not required.

Spanish

No.	Credits	Title	Offered to	Prereq. courses
31-32	10†	Beginning Spanish.....	All	None
33-34	10†	Intermediate Spanish.....	All	31-32 or 2 years high-school Span.
35-36	10	Survey of Spanish Lit.....	All	34-35 or 3 years
37-38-39 ¹	9†	Survey of Spanish Lit.....	All	High-school Span.
40-41-42 ¹	3†	Elem. Spanish Conversation.....	All	34-35 or 3 years high-school Span.
43-44-45 ¹	3†	Elem. Spanish Composition	All	34-35 or 3 years high-school Span.
*46-47-48	3†	Advanced Spanish Conversation.....	Jr., sr.	40-41-42
*49-50-51	3†	Advanced Spanish Composition.....	Jr., sr.	43-44-45
*52	3	Teachers' Course.....	Jr., sr.	See below.
151-152-153	6†	Cervantes.....	Jr., sr., grad.	37-38-39
154-155-156	6†	Spanish Dramatic Literature.....	Jr., sr., grad.	37-38-39
*157-158-159	6†	Spanish Novel.....	Jr., sr., grad.	37-38-39
*160-161-162	6†	Critical Study of Selected Spanish Classics.....	Jr., sr., grad.	37-38-39
*163-164-165	6†	Lectures in Spanish.....	Jr., sr., grad.	40-41-42 and 46-47-48 or 37-38-39
*169-170-171	3†	Spanish Syntax and Composition.....	Jr., sr., grad.	49-50-51 or by permission of instructor

Portuguese

*53-54-55	9†	Beginning Portuguese.....	Jr., sr.	15 credits in dep't preferably Spanish
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Italian

61-62	10†	Beginning Italian.....	All	None
*64-65-66	9†	Survey of Italian Lit.....	Jr., sr.	61-62
*181-182-183	6†	Dante, Petrarch, Boccaccio	Jr., sr., grad.	61-62; 64-65-66 or 13-14-15 or Eng. 1-2-3
*184-185-186	3†	Dante (in English).....	Jr., sr., grad.	Hist. 1-2-3 and Eng. 1-2-3 or Fr. 13-14-15. (Required of students taking 181-182-183.)

† All quarters must be completed before credit is given for any one quarter.

1 Courses 13-14-15, 16-17-18 and 19-20-21 may be combined to form a five-hour unit course for Junior College students. The unit course thus formed may be dropped at the end of the second quarter, but the third quarter's work must be completed before more advanced courses in French may be elected. Courses 38-38-39, 40-41-42 and 43-44-45 may be combined in like manner to form a unit course in Spanish. Courses 84-85-86, 87-88-89, and 97-98-99 may be also combined under the same conditions.

For sequences of junior college courses, see the departmental bulletin at room 200 F.

Courses in French or Spanish conversation may be taken only when accompanied by the corresponding courses in composition. No credit will be given for work done in a course in conversation unless the course in composition is passed also. Courses in composition may be taken separately.

Students in the Engineering and Medical Schools may receive credit for one quarter of Course 7-8 when attached to Course 4-5.

The Teachers' Course in French (90) will be offered the first and third quarters. The Teachers' Course in Spanish (52) will be offered the second quarter.

Prerequisites for Teachers' Course, in addition to Course 13-14-15 (or Spanish equivalent, Course 37-38-39) one conversation-composition course and one literary.

No student will be allowed to elect courses more advanced than Intermediate French or Spanish, who has not received a grade of C or better in the intermediate courses.

INTRODUCTORY COURSES

French

4-5. BEGINNING FRENCH. Pronunciation, grammar, oral exercises, translation. FRELIN, DELSON, CLEFTON, GUINOTTE, Elliott, NOTT.

7-8. INTERMEDIATE FRENCH. Review of grammar, connected prose composition, conversation and reading of representative authors. FRELIN, CLEFTON, DELSON, GUINOTTE.

10-11. SURVEY OF FRENCH LITERATURE. This course will outline the history of French literature from 1600 to present day, and is prerequisite for the courses devoted to special periods. Representative texts will be read. SIRICH, CLEFTON, GUINOTTE.

13-14-15. SURVEY OF FRENCH LITERATURE. Same as 10-11, except that it is a three-hour course extending through three quarters. LECOMPTE, PHELPS, VAN ROOSBROECK.

16-17-18. ELEMENTARY FRENCH CONVERSATION. A small amount of outside preparation will be required. OLMSTED, BARTON, FRELIN, GUINOTTE.

19-20-21. ELEMENTARY FRENCH COMPOSITION. OLMSTED, BARTON, FRELIN, GUINOTTE.

*81. FRENCH PHONETICS. Practical study of the pronunciation of French: the sounds, the stress group, the connected phrase. Oral and phonograph practice in enunciation based upon reading of texts representing various literary types. DELSON.

*84-85-86. ADVANCED FRENCH CONVERSATION. FRELIN.

*87-88-89. ADVANCED FRENCH COMPOSITION. FRELIN.

*90. TEACHERS' COURSE. Methods of teaching French in high schools. Courses of study, textbooks, etc. Lectures, observations, and reports. Open to juniors and seniors qualifying for a certificate to teach French as a major or minor subject. Credit in Education only. DE BOER.

Spanish

31-32. BEGINNING SPANISH. Pronunciation, grammar, oral exercises and translation. HOUSE, VASCONCELOS.

33-34. INTERMEDIATE SPANISH. Review of grammar, conversation, connected prose composition, and reading of representative authors. HOUSE, VASCONCELOS.

35-36. SURVEY OF SPANISH LITERATURE. Same as 37-38-39, except that it is a five-hour two-quarter course.

37-38-39. SURVEY OF SPANISH LITERATURE. An outline of the history of Spanish literature from 1500 to the present day, based upon texts and

collateral reading. Prerequisite for courses devoted to special periods. **HOUSE.**

40-41-42. ELEMENTARY SPANISH CONVERSATION. A small amount of outside preparation will be required. **COBURN.**

43-44-45. ELEMENTARY SPANISH COMPOSITION. **COBURN.**

*46-47-48. ADVANCED SPANISH CONVERSATION.

*49-50-51. ADVANCED SPANISH COMPOSITION. Special attention given to social and commercial correspondence.

*52. TEACHERS' COURSE. Methods of teaching Spanish in the high schools. Courses of study, textbooks, etc. Lectures, observations, and reports. Open to juniors and seniors qualifying for a certificate to teach Spanish as a major or minor subject. Credit in Education only. **DE BOER.**

Italian

61-62. BEGINNING ITALIAN. Pronunciation, grammar, oral exercises, translation. **PHELPS.**

*64-65-66. SURVEY OF ITALIAN LITERATURE. An outline of the history of Italian literature from 1400 to the present day with especial emphasis on poetry. Representative texts will be read. **PHELPS.**

Portuguese

*53-54-55. BEGINNING PORTUGUESE. Pronunciation, grammar, oral exercises, and reading of representative texts. **OLMSTED.**

ADVANCED COURSES

French

*97-98-99. FRENCH LITERATURE: NINETEENTH CENTURY. A study of the romantic and realistic movements as manifested in the novel, drama, and poetry. Assigned texts and collateral reading. The course is conducted entirely in French. **BARTON, DELSON.**

*100-101-102. FRENCH LITERATURE: SEVENTEENTH CENTURY. Influence of the literary salons. Development of French prose. Perfection of French dramatic art by Corneille, Racine, and Molière. Assigned texts, collateral reading. **OLMSTED.**

*103-104-105. FRENCH LITERATURE: EIGHTEENTH CENTURY. Philosophic movement: Bayle, Fontenelle, Montesquieu, Voltaire, l'Encyclopédie, Rousseau. Literature: poetry, tragedy, comedy, novel. Reading, discussions, reports based on collateral reading. **SEARLES.**

*106-107-108. FRENCH LITERATURE: SIXTEENTH CENTURY. Forerunners of the Renaissance: Marot and l'Ecole Lyonnaise. The Renaissance movement and the Reformation, Rabelais, Calvin and the Pléiade and

its successors; Montaigne; the situation at the close of the century. SIRICH.

*109-110-111. FRENCH DRAMATIC LITERATURE. A study of the development of dramatic literature in France from the classical period to the present time. OLNSTED.

*112-113-114. FRENCH LYRIC POETRY. Principles of French prosody. A study of the evolution of French lyric poetry. Alternates with 115-116-117. SEARLES.

*115-116-117. FRENCH CLASSICISM. The development of French classic ideals and doctrines. The humanistic element, the reform of Malherbe, the adoption of the Aristotelian doctrines. French classic writers. Alternates with 112-113-114. (Not offered in 1919-20.) SEARLES.

*118-119-120. FRENCH REALISTIC NOVEL: NINETEENTH CENTURY. A study of realism with especial reference to the novel. Flaubert, Maupassant, Zola, etc. LECOMPTE.

*121-122-123. LECTURES IN FRENCH. Announcement later.

*131-132-133. FRENCH ORAL DICTION. Dissertations orales sur des sujets variés.

*134-135-136. FRENCH SYNTAX AND COMPOSITION. Special studies in characteristic problems of French syntax. BARTON.

Spanish

*151-152-153. CERVANTES. A study of his life and works. Attention will be centered upon *Don Quixote* and the *Novelas Exemplares*. Alternates with 157-158-159. (Not offered in 1919-20.)

*154-155-156. SPANISH DRAMATIC LITERATURE. A general survey of Spanish dramatic literature, with special attention to the Golden Age. Alternates with 160-161-162. (Not offered in 1919-20.) HOUSE.

*157-158-159. SPANISH NOVEL. A study of the development of Spanish fiction from the picaresque novel to that of the present day. Alternates with 151-152-153.

*160-161-162. CRITICAL STUDY OF SELECTED SPANISH CLASSICS. Intensive reading of texts and study of literary influences. The Spanish ballad and the picaresque novel will be treated in 1919-20. Alternates with 154-155-156. HOUSE.

*163-164-165. LECTURES IN SPANISH. Subject for 1919-20: Spanish Literature of the nineteenth and twentieth centuries.

*169-170-171. SPANISH SYNTAX AND COMPOSITION. Special studies in characteristic problems of Spanish syntax. HOUSE.

Italian

*181-182-183. DANTE, PETRARCH, AND BOCCACCIO. An introduction to their works. The three cantiche of the *Divina Commedia* are read, one each year in rotation, together with a number of the canzoni, and sonnets of Petrarch, and portions of the *Decameron*. PHELPS.

*184-185-186. DANTE IN ENGLISH. Lectures; reading and discussion of the *New Life*, and the two cantiche of the *Divine Comedy* not read in 181-182-183. Private reading of one other work. PHELPS.

SCANDINAVIAN

Professors GISLE C. J. BOTHNE, Chairman, ANDREW A. STOMBERG.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1-2	10	Beginning Norwegian.....	All	None
3	5	Intermediate Norwegian.....	All	None
4-5	10	Advanced Norwegian(Survey)	Soph., jr., sr.	1-2-3
7-8	10	Beginning Swedish.....	All	None
9	5	Intermed. Swedish.....	All	None
10-11	10	Advanced Swedish.....	Soph., jr., sr.	7-8-9
12	5	Ancient and Medieval Scand. Hist.....	Soph., jr., sr.	10-11, or 4-5 or Hist. 1-2-3
*101-2-3	9	Modern Norwegian Literature	Jr., sr., grad.	4-5
*104-5-6	9	Modern Scand. History.....	Jr., sr., grad.	10-11-12 or 4-5 or His- tory 1-2-3 or 4-5-6
*107-8-9	9	Modern Swedish Literature..	Jr., sr., grad.	10-11-12
*110	3	Ibsen.....	Sr., grad.	101-2-3
*111-2-3	6	Old Norse (Icelandic).....	Sr., grad.	See statement
*114	3	Strindberg.....	Sr., grad.	107-8-9
*115	3	Teachers' Course in Swedish.	Sr., grad.	10-11-12 or 4-5
*116	3	Teachers' Course in Nor- wegian.....	Sr., grad.	4-5 or 10-11-12
*117-8	6	Earlier Norwegian Literature	Sr., grad.	101-2-3

1-2. BEGINNING NORWEGIAN. Grammar, composition, select readings in easy prose and poetry. /

3. INTERMEDIATE NORWEGIAN. Grammar, composition, conversation, elementary history of literature, and select works of modern authors.

4-5. ADVANCED NORWEGIAN (SURVEY). Prose and poetry. BOTHNE.

7-8. BEGINNING SWEDISH. Grammar, composition, conversation, reading of selected prose texts. STOMBERG.

9. INTERMEDIATE SWEDISH. Reading selected works in prose and verse. STOMBERG.

10-11. ADVANCED SWEDISH (SURVEY). Brief survey of the history of Swedish literature and reading of Tegnér's *Fritiofs Saga* and Runeberg's *Fänrik Ståks Sägner*. STOMBERG.

12. ANCIENT AND MEDIEVAL SCANDINAVIAN HISTORY. The antiquities of Scandinavian formation of states, the Viking expeditions, medieval culture. Knowledge of Scandinavian not required. STOMBERG.

101-102-103. MODERN NORWEGIAN LITERATURE. Norwegian literature from 1814 to the present day. BOTHNE.

*104-105-106. MODERN SCANDINAVIAN HISTORY. Religious, political, and economic changes in the North, military enterprises, growth of liberalism, material progress. Knowledge of Scandinavian not required. STOMBERG.

*107-108-109. MODERN SWEDISH LITERATURE. The Swedish novel. Study of a selected list of Swedish classics. STOMBERG.

*110. IBSEN. Lectures, reading, and interpretation. BOTHNE.

*111-112-113. OLD NORSE (ICELANDIC). Grammar, and reading. Gunnlaug's *Saga Ormstungu*. BOTHNE.

*114. STRINDBERG. Lectures, reading, and interpretation. STOMBERG.

*115. TEACHERS' COURSE IN SWEDISH. For students who expect to teach Swedish in the high schools. STOMBERG.

*116. TEACHERS' COURSE IN NORWEGIAN. For students who expect to teach Norwegian in the high schools. BOTHNE.

*117-118. EARLY NORWEGIAN LITERATURE. History of literature. Saga period. Norwegian and Danish folk-songs. Holberg, *Oplysningstiden*. Six credits. BOTHNE.

SOCIOLOGY AND SOCIAL WORK

Professors ARTHUR J. TODD¹, Chairman, ALBERT E. JENKS; Associate Professors LUTHER L. BERNARD, MANUEL C. ELMER; Assistant Professors ROSS L. FINNEY, GUSTAV A. LUNDQUIST; Lecturers FRANK J. BRUNO, OTTO W. DAVIS, ARTHUR H. TAYLOR, EDWARD C. WAITE; Superintendents of State Board of Control institutions; Teaching Fellow ALMENA DAWLEY; Supervisor of Field Work CAROLINE BEDFORD.

COURSES

No.	Credits	Title	Offered to	Prereq. courses
1	5	Introduction to Sociology and Anthropology.....	Soph., jr., sr. ²	None
6	3	Modern Social Reform Movements.....	Soph., jr., sr.	1

¹ For freshmen, this course is open only during their third quarter.

² On leave of absence.

No.	Credits	Title	Offered to	Prereq. courses
14	3	Rural Sociology	Jr., sr.	1 for Arts students. None for seniors in professional schools
*51	3	Background of Dependency and Defectiveness	Jr., sr.	1
*52	3	Treatment of Dependents and Defectives	Jr., sr.	51
*53	3	Treatment of Delinquents...	Jr., sr., grad.	1, and Psychology 1-2-3 recommended
*54	3	Child Welfare	Jr., sr.	51 or 52
*55	3	Housing Problems	Jr., sr.	1
*99	3	Supervised Field Practice Work	Jr., sr., grad.	Consent of director
*101	3	Social Organization	Jr., sr., grad.	Three courses one of which may be in psych., philos., econ. or pol. sci.
*102	3	Social Control	Jr., sr., grad.	Same as for 101
*108	3	Social Psychology (primarily for sociology students)	Jr., sr., grad.	1 and Psy. 1-2-3
*110	2	Community Organization and Social Work in Small Towns	Jr., sr., grad.	Two courses
*114	3	Rural Social Institutions	Jr., sr., grad.	14
*119	3	The Family	Jr., sr., grad.	Three courses one of which may be in home econ., econ., pol. sci., anthropol. or law
*120	3	Social Progress	Jr., sr., grad.	Three courses, one of which may be in econ., pol. sci., educ. or philos.
*121	3	Methods of Social Investigation	Jr., sr., grad.	Three courses
*128	2	Charitable Admin., Finance, and Publicity	Jr., sr., grad.	Three courses
*130	2	Technique of Family Treatment	Jr., sr., grad.	51, 52 and one other
*132	2	Juvenile Courts and Probation	Jr., sr., grad.	51, 52, 53
*133-134- 135	3	Hospital Social Service	Jr., sr., grad.	Consent of Director
*137-138- 139	6	Mental Case Work	Jr., sr., grad.	Consent of Director
*140	3	History of Social Theory	Jr., sr., grad.	Same as for 101
*180	2	Seminar in Educational Sociology	Jr., sr., grad.	1, 6 and 120 or educ.

1. INTRODUCTION TO SOCIOLOGY AND ANTHROPOLOGY. A study of the origin and development of human societies; various agencies which have determined the type of social life; social organization, institutions, and progress; bearing of sociology upon other social sciences and arts. TODD, JENKS, BERNARD, ELMER, FINNEY, LUNDQUIST.

6. MODERN SOCIAL REFORM MOVEMENTS. A survey of attempts to overcome certain social maladjustments: child labor, the city, bad housing, poverty, degeneracy; movements for public health, industrial democracy, social insurance, protection of infancy and youth, public recreation, etc. TODD, ELMER, FINNEY.

14. **RURAL SOCIOLOGY.** The background and evolution of country life; rural conveniences, communication, coöperation; rural social institutions, especially the family, school, church and social center; rural leadership, surveys, organization, social agencies. **BERNARD, LUNDQUIST.**

45-46. **ELEMENTS OF SOCIAL HYGIENE AND COMMUNITY PROTECTIVE WORK.** (Not offered in 1919-20.)

*51. **THE BACKGROUND OF DEPENDENCY AND DEFECTIVENESS.** This course considers the conditions in contemporary industrial societies out of which the social problems of the dependent and defective arise. **BRUNO.**

*52. **TREATMENT OF DEPENDENTS AND DEFECTIVES.** This course reviews the methods used or advocated for the prevention and alleviation of poverty and defectiveness. **BRUNO.**

*53. **TREATMENT OF DELINQUENTS.** The causes of crime; nature of the criminal; criminal procedure; methods of treatment (prisons, reformatories, parole, probation); the juvenile offender; juvenile courts; preventive methods. **ELMER.**

*54. **CHILD WELFARE.** Study of social obligations to the child; development of the child-saving movement in the United States; infant and child mortality, recreation, education; courts, institutions, societies, and other public efforts for the child. **TAYLOR.**

*55. **HOUSING PROBLEMS.** An examination of housing evils and their causes; the various movements for the prevention or improvement of bad housing; town planning; garden cities. Lectures, readings, field work, and essay. **DAVIS.**

*99. **SUPERVISED FIELD PRACTICE WORK.** This is a course in technique open only to selected students who have taken, or are taking, Courses 51, 52, 53, 54, 55, 110, 130, or 132. **BEDFORD.**

*101. **SOCIAL ORGANIZATION.** The organization and structure of social groups; the selection of group types and values; the disorganization and reorganization of institutions; purposive social organization. **BERNARD.**

*102. **SOCIAL CONTROL.** Nature, purpose, and methods of social control; institutional and non-institutional controls; the evolution of sanctions in social control; the revision of the social controls under the influence of modern science. **BERNARD.**

*103. **SOCIOLOGY OF CONFLICT.** (Not offered in 1919-20.)

*104. **STATE CARE OF DEPENDENTS, DEFECTIVES, AND DELINQUENTS IN MINNESOTA.** (Not offered in 1919-20.)

- *108. SOCIAL PSYCHOLOGY (primarily for sociology students). The social attitudes; their development and modification under social pressures; the interactions of individuals and groups. BERNARD.
- *110. METHODS OF COMMUNITY ORGANIZATION AND SOCIAL WORK IN SMALL TOWNS AND COUNTRY. Concrete problems and methods are emphasized. BERNARD.
- *114. RURAL SOCIAL INSTITUTIONS. A detailed study of the problems of organization and efficiency of selected rural institutions, especially religious, educational, civic, and recreational. For advanced students. Lectures, discussion, reports. LUNDQUIST.
- *119. THE FAMILY. The evolution of the family; its various forms and their relation to other social institutions; the service of the family in social evolution; contemporary problems of the family (standards of living, birth rate, feminism, etc.) ELMER.
- *120. SOCIAL PROGRESS. A study of the basis for social progress in human nature; analysis of fundamental social institutions with regard to their contributions to human advance; necessary social readjustments to convert drift into progress. BERNARD.
- *122. METHODS OF SOCIAL INVESTIGATION. Methods of gathering and presenting community facts; social statistics; social surveys. Lectures, problems, and field work. ELMER, DAWLEY.
- *125-126-127. SETTLEMENT AND COMMUNITY CENTER WORK. (Not offered in 1919-20.)
- *128. CHARITABLE ADMINISTRATION, FINANCE, AND PUBLICITY. A technical study of methods of organizing charitable agencies, of financing them, and of making the public aware of their work. Lectures and practice work. DAVIS.
- *130. TECHNIQUE OF FAMILY TREATMENT. An intensive study of social case work as the basis of practical dealing with problems of dependency and delinquency. Lectures and conferences. BRUNO.
- *132. JUVENILE COURTS AND PROBATION. Primarily a course in probation practice work, but prefaced by lectures on the social and legal aspects of the juvenile court and probation. TODD, WAITE.
- *133-134-135. HOSPITAL SOCIAL SERVICE. A course open only to students who are properly grounded in case work and who wish to specialize in this field. _____, TEBBETS.
- *137-138-139. MENTAL CASE WORK. Specialized social case work with mentally abnormal and subnormal persons. Clinical material from the psycho-educational clinic, psychiatric clinics, and University dispensary. (Registration only with consent of the Director.) DAWLEY.

*140. HISTORY OF SOCIAL THEORY. A rapid survey of the leading social theories from the time of the Greeks, with special reference to the development of sociology in the nineteenth century. The theories are related to their social backgrounds. BERNARD.

*150. SEMINAR. Subject for fall quarter: The Literature of Social Protest. Open to qualified students in either English or Sociology. (Not offered in 1919-20.) TODD.

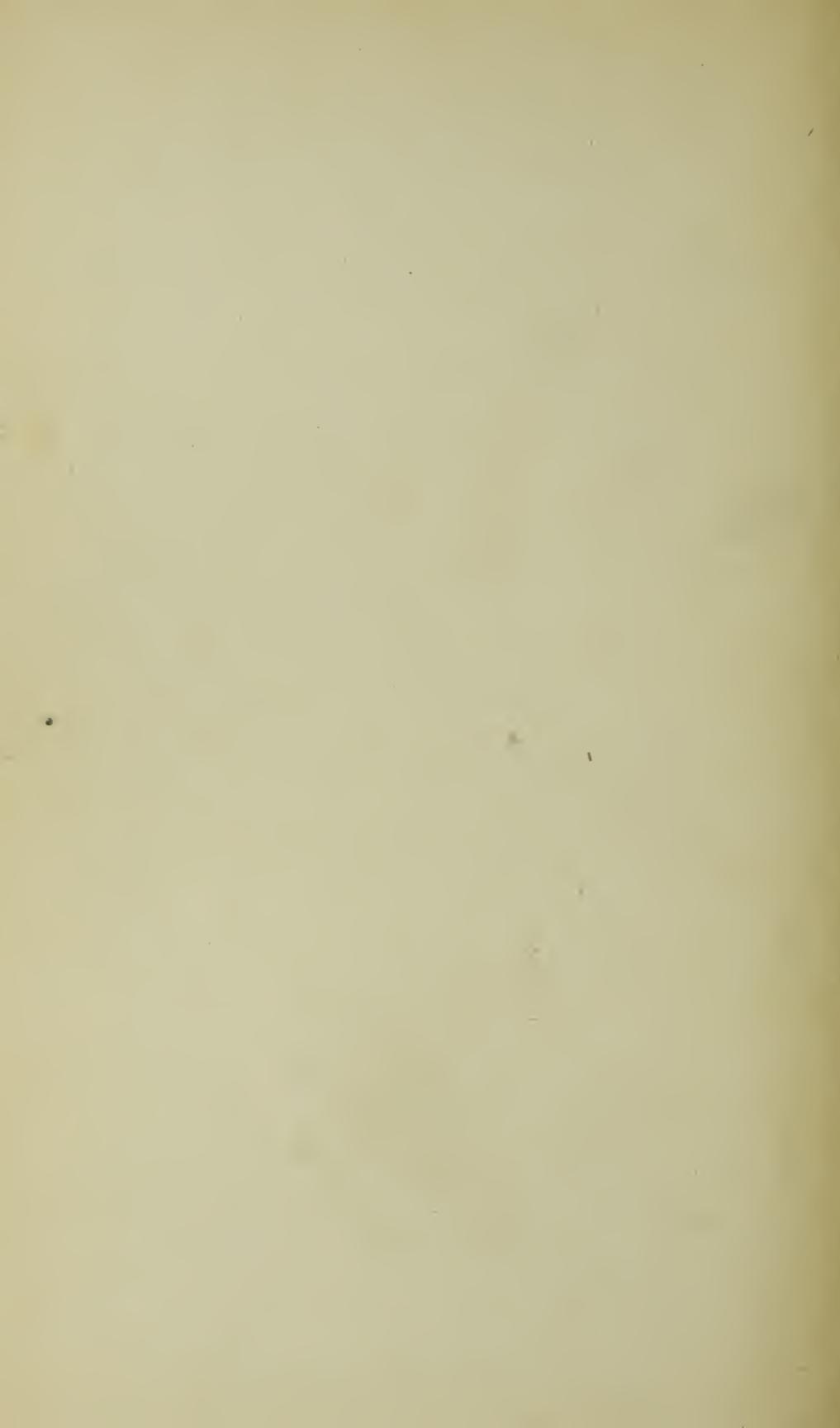
*151. SEMINAR. Subject for winter quarter: Social Aspects of the Labor Problem. (Not offered in 1919-20.) TODD.

*152. SEMINAR. Subject for spring quarter: Problems of Institutional Administration and Reconstruction. (Not offered in 1919-20.) TODD.

*180. SEMINAR IN EDUCATIONAL SOCIOLOGY. FINNEY.

ALLIED COURSES IN OTHER DEPARTMENTS

Home Economics 70, 71, 72, 39; Political Science, 48, 5, *108; Anthropology 5, *113, *125; Economics *161, *167; Philosophy *124-125; Education *3; Agricultural Education *173.



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